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THE ETIOLOGY AND CLASSIFICATION OF CIRRHOSES OF THE LIVER.*

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The term cirrhosis was first applied to a pathologic condition of the liver, in 1819, by Laennec, who was led to select this name on account of the color of the liver—reddish-yellow or tawny. This term is an unfortunate one, inasmuch as the color of the liver in this disease varies with the relative amounts of fatty matter and biliary pigment in the tissue, and furthermore, it gives no indication of either the etiology or the pathology of the disease. Before Laennec, Fernel had written concerning the action of wine in causing scirrhus —induration—of the liver; Vesale had also discussed atrophy of the liver observed in alcoholics; Morgagni had spoken of ascites due to compression or occlusion of the intra-hepatic branches of the portal vein, and Baillie, in 1803, had recognized the relationship between dropsy and atrophy of the liver. However, credit should be given to the great teacher, Laennec, for bringing prominently to the attention of the profession one form of the diseases of the liver which is still designated by the name that he coined. The term sclerosis is also objectionable, because, while the hardening due to a cicatricial contraction may occur in the later stages, it is not a primary and essential feature of the pathologic process. Generally, members of the profession now understand by the term cirrhosis an abnormal proliferation of the connective tissue of the liver. The designation, interstitial hepatitis, is more suitable than either of the names already mentioned, but even this is not free from objection, because it is more than probable that in one form of the disease, or, more properly speaking, in one of the diseases designated by the term cirrhosis, the degenerative changes begin in the parenchyma of the organ and the involvement of the connective tissue is a secondary process. At first it was believed that the liver is always enlarged in the early stages and that the marked atrophy observed at autopsy is due to cicatricial contraction of the overgrowth of connective tissue.

In 1846, Requin called attention to the fact that hypertrophy of the liver is not always followed by atrophy, and three years later one of his students, Mesnet, reported a case of cirrhosis with extensive hypertrophy and reached the following conclusion: "Cirrhosis is not necessarily followed by atrophy. The two diseases, hypertrophy of the liver and cirrhosis can exist in the same individual. I can not agree with Cruveilhier, who holds that cirrhosis always consists of atrophy of the majority of the liver granulations and leads to diminution in the size of the organ, because at least two cases of cirrhosis with hypertrophy have been observed."[1]

In 1857, Todd, in a clinical lecture, contrasted the atrophic and hypertrophic forms of cirrhosis and stated: "The disease (atrophy), which no doubt is most frequently the result of intemperate habits in drinking, is very common, and all the cases resemble each other to a remarkable extent. It can not be discerned with certainty in its early stages, although no doubt a practiced eye would seldom be wrong, for the chronic changes which terminate in this shrunken and contracted state of the organ are, as I have already stated, most stealthy and insidious in their approach. A similar group of symptoms accompanies an enlarged and sometimes very much enlarged, condition of the liver, and systematic authors, especially those of late years, regard these two conditions as one and the same disease—cirrhosis. Indeed, they lay it down that the enlarged liver is an early stage of the contracted liver, and that the former by the gradual diminution of its size passes into the latter. I find it impossible to accede to this view, and I am anxious to call your special attention to the two cases that you may, as opportunities offer, direct your attention to their clinical phenomena, and watch whether the one can be traced into the other."

In 1871, Ollivier reported a case of hypertrophic cirrhosis, but it was the thesis of Hanot, in 1876, with the subsequent investigation of the same author and of others stimulated by his work, that has led to the recognition of hypertrophic cirrhosis as a distinct disease, and, for this reason, this form of cirrhosis is often designated as the cirrhosis of Hanot, in contradistinction to that of Laennec—the atrophic form. Fortunately another great French clinical teacher, Charcot, took up the subject and gave great impetus to the study. Charcot divided cirrhoses of the liver into the following:

1. An insular, monolobular, intralobular and interlobular form of biliary origin—the cirrhosis of Hanot.
2. An annular, multilobular, perilobular form of venous origin—the cirrhosis of Laennec.
3. A rare monocellular form observed in congenital syphilis.

Experimental research, clinical observation and the study of the pathologic conditions have confirmed the views of Todd, Hanot and others just mentioned, and we no longer recognize hypertrophic and atrophic cirrhoses as different stages of the same disease, but as distinct conditions, unlike in origin, in etiology, in symptomatology and in pathology. I will, therefore, proceed to discuss these separately, then compare and

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Practice of Medicine, and approved for publication by the Executive Committee of the Section: Drs. Frank Billings, George Dock and J. M. Anders.

1. Similar cases were reported by Monnert (1852) and Gubler (1857), but I have not seen these reports.

contrast them, and finally will speak of the mixed forms which are not infrequently seen.

ATROPHIC CIRRHOSIS.

Gross Appearance.—The liver is reduced both in size and weight. It varies in color and may be brownish, reddish-brown, reddish-yellow, gray or grayish-brown. The surface is covered with nodules which vary in size from those barely discernible to those as large as a filbert. The border of the liver is thickened, blunt and indented by fibrinous bands. On removing the strongly adherent capsule, the nodules stand out more prominently, and the appropriateness of the term, "hob-nailed liver," becomes evident. On section, the organ is found to be more or less hardened and the cut surface shows nodules of varying size surrounded by connective tissue.

Etiology.—As has been stated, the influence of the abuse of alcoholic drinks in the causation of this condition has long been recognized, and among the etiologic factors alcohol holds the first place. The more concentrated the alcoholic beverage, the more marked is the effect; consequently, brandy and whisky drinkers are more likely to develop this disease than are those who confine themselves to fermented and malted drinks. For like reason, those who take these alcoholic drinks on an empty stomach are in greater danger than are those who limit their potations to their meals. It has been stated that the more fusel oil there is in the beverage the more injurious is it in its effects on the liver. All alcoholics do not develop cirrhosis, and it is believed that a sedentary life contributes to the ill effects of the poison. De Giovanni thinks that a scrofulous taint favors the development of cirrhosis and that there is a congenital predisposition to this disease. However, this opinion is altogether theoretical and has, as yet, no scientific basis.

The positive evidence from clinical observation that alcohol is the most common cause of atrophic cirrhosis in man, has led many investigators to attempt to induce this condition in the lower animals by the use of this agent. It would require too much space and time to even enumerate all the investigations that have been made with this object in view. Most of these studies, some of which have been made in the most careful and painstaking manner, have given apparently only negative results, and it can be said that no one has succeeded in inducing well-marked interstitial hepatitis in the lower animals by administering alcohol to them. Notwithstanding this fact, these studies have been of much value in the extension of our knowledge of the etiology and pathology of atrophic cirrhosis, and it will be of service to us to briefly state here the effects produced in the liver by the experimental employment of alcohol.

The findings of Afanassijew may be summarized as follows: In dogs the continued administration of alcohol, either with or without amylic spirit, causes a degeneration of the hepatic cells, which swell, become more rounded and are easily detached from the stroma. The nuclei of many of these cells contract and fail to react normally to stains. In rabbits these changes are more marked and sometimes whitish maculæ may be seen macroscopically. These spots contain in their centers branches of the portal vein and sometimes continue along the peripheral parts of the lobules. The hepatic cells in the region of these maculæ show a more or less marked condition of coagulation necrosis. The cells near the center of the maculæ are more markedly affected, while in those at the periphery the destructive changes are less evident. In addition to the parenchymatous and fatty degeneration in chronic alcoholic poisoning there is observed a tendency to lymph stasis. This is especially observable in the liver, brain, stomach and intestines. Whether this is due to the retarded circulation from weakened heart action or to effects on the central nervous system can not be determined. The degenerative changes in the liver are in direct proportion to the severity of the intoxication. The addition of amylic alcohol intensifies, but does not alter, the character of the destructive changes.

The same investigator injected diluted alcohol directly into the portal circulation. The animals thus treated survived the operation and were killed from seven hours to eight days afterward; one dog was not killed until four months after the injection. The action on the tissues of the liver was found to be more pronounced when the alcohol was administered in this way. The liver cells along the branches of the portal vein showed the following changes: The nuclei were shrunken and individual chromatin granules could not be recognized. The cell protoplasm appeared cloudy and finely granular. The cells themselves were contracted; the hepatic capillaries were dilated and filled with blood. These changes were not uniform throughout the lobules, but were distributed in patches, resembling the parenchymatous fatty degeneration observed as a result of the indirect action of alcohol. Similar appearances have been seen after long-continued administration by the mouth. With larger doses—from 2.5 to 5 c.c. of 48 per cent. alcohol—injected into the portal circulation, necrotic changes were obtained. Macroscopically the necrosis was observed as whitish spots of varying size on the surface of the liver. The necrotic cells were found to be surrounded by a zone of cells showing fatty degeneration and beyond these were seen normal cells. When the animal lived three or four days after the operation, the connective tissue cells of the stroma were found to be increased in number and numerous giant cells were observed. After a time true cicatricial tissue replaced the necrotic areas.

Afanassijew concludes his observations as follows: We have obtained by the injection of alcohol into the liver, also by continued administration by the mouth in rabbits, necrotic areas in the liver similar to those induced by phosphorous and arsenic. These necrotic areas stimulate the surrounding normal tissue and this stimulation leads to proliferation of the cells of the stroma and the development of giant cells. In short, this investigator believes that alcoholic cirrhosis begins by inducing changes in the liver cells, leads to fatty degeneration and necrosis, and that the proliferation of the connective tissue is subsequent to and consequent upon the changes in the hepatic cells.

Ackermann concludes his researches upon this subject with the following statement: "The proliferation of the connective tissue is not a result of the direct action of alcohol, but is due to the stimulating effect of the liver cells, altered by the action of the poison, on the connective tissue."

Practically all who have studied experimentally the action of alcohol on the liver of animals, have concluded that this poison causes granular and fatty degeneration in the liver cells. Some have reported slight proliferation of connective tissue, and the most reasonable conclusion is that which makes the connective tissue changes subsequent to and dependent upon alterations in the hepatic cells. When we remember that men often abuse alcohol for years before they develop a typical

atrophy of the liver, we need not be surprised when we fail to induce a like condition in animals even after the administration of this poison for months, and it seems to me that with the clinical and experimental evidence before us, we are justified in coming to the conclusion that in alcoholic cirrhosis the pathologic changes begin in the hepatic cells.

Chronic phosphorous poisoning also has been long recognized clinically as a cause of atrophic cirrhosis, and a typical form of this disease, with ascites, has been developed experimentally in animals by the administration of this agent. In these experiments it has also been shown beyond doubt that the pathologic changes begin in the hepatic cells and that the proliferation of connective tissue is secondary. Aufrecht, after experimenting with phosphorus, reaches the following conclusion: "The parenchymatous inflammation is the primary process; in those cases in which the harmful agent acts long enough or powerfully enough to prevent speedy disappearance of the parenchymatous inflammation, secondary changes in the interstitial tissue develop as a consequence of the diseased condition of the parenchymatous parts."

Clinicians have frequently observed atrophic cirrhosis in cases of chronic poisoning with certain metallic compounds, and the experimental study of the effects of these agents on the lower animals has contributed valuable additions to our knowledge of the histogenesis of this disease.

The researches of Ziegler and Oblonsky, so far as they pertain to the action of arsenic on the liver, may be condensed into the following brief statements: Fatty change in the hepatic cells is always apparent and evidently is one of the early effects of chronic arsenical poisoning; indeed, in acute poisoning, when the animal dies in a few hours after the administration of a single dose, some of the hepatic cells can be seen on microscopical examination to be filled with minute droplets of fat. In some instances the degenerative changes in the hepatic cells are quite as marked as they are in the milder forms of phosphorus poisoning. In many animals fatty change in hepatic cells is the only change detectable. That some of the cells involved are still capable of multiplication is shown by the observation of typical karyokinetic figures. As a secondary stage in the progressive effects of arsenic, there appear necrotic areas; then, the periportal connective tissue is often found to be in a state of proliferation, which is indicated partially by the presence of more or less abundant karyokinetic figures and partially by the increase of cellular elements, and by the presence of numerous large cells with large nuclei and rich in protoplasm. It will be seen that in the order of development these changes correspond with those observed after alcohol and phosphorus poisoning. In some cases of chronic arsenic poisoning the fatty changes in the liver are more extensive than they are even after death from phosphorus, and when death is delayed for two or three weeks the hepatic cells show marked atrophic changes.

While chronic poisoning with the soluble compounds of aluminum is not known to occur in man, the researches of Siem and Dölken on animals show that these salts have much the same effect upon the hepatic cells of animals as those observed after poisoning with other metallic compounds. The liver is dark-red and the surface may be marked with prominent yellow blotches. The substance of the organ is somewhat friable and microscopic examination shows the hepatic cells undergoing granular and fatty degeneration.

Among the etiologic factors of atrophic cirrhosis, chronic lead poisoning has long been recognized, and Lafitte has induced a typical cirrhosis of the liver in rabbits by the long-continued administration of soluble salts of this metal. This author suggests that the presence of small quantities of lead in wine may be partially responsible for the cirrhosis observed in drinkers of this beverage. Atrophic cirrhosis is also likely to occur among smelters of copper, even when these men have been total abstainers from the use of alcohol. The effects of lead and copper on the tissues of the liver are practically the same as those of the other poisonous salts and of phosphorus and alcohol.

It seems to me that it must be admitted, from the evidence already presented, that in the development of atrophic cirrhosis the primary changes occur in the parenchyma of the liver and that the involvement of the connective tissue and the proliferation of the same is secondary to and consequent upon the necrotic changes in the hepatic cells.

There are believed to be other etiologic factors possibly concerned in the development of atrophic cirrhosis. Frerichs gave syphilis a prominent place in this list, and Thierfelder thinks that syphilitic cirrhosis differs from that induced by alcohol in the more uneven distribution of the pathologic changes in the hepatic tissue. However, since syphilitics are so frequently given to alcoholic excesses, some caution is necessary in reaching conclusions on this point. Cirrhosis sometimes accompanies amyloid disease and it is possible that both may be due to the same cause, especially to syphilis. Many English clinicians with large experience in India believe that the use of irritating spices and other condiments contributes to the production of cirrhosis of the liver so frequently observed in that country. The toxins of some of the acute infectious diseases, such as cholera, typhoid fever and the plague, are believed to be capable of inciting changes in the liver leading to atrophic cirrhosis. Semmola says, "Infective processes play a great part in the causation of cirrhosis." The same author assigns a prominent place to malaria among the causative agents of this pathologic state. It is quite the fashion at present to attribute most of the ills of life to autointoxication, and this much-abused and frequently misapplied term is found in many of the lists of the etiologic factors of cirrhosis. It is frequently said that it is not alcohol that causes cirrhosis of the liver, but that the drink so alters the digestive tract and its secretions that the products of an abnormal and imperfect digestion acting on the liver cause the histologic changes that result in this disease. Even were this a demonstrated fact, which it is not, the disease should not be termed one of the autointoxications, but should be said to result indirectly from the abuse of alcohol. In either case alcohol is the causative agent, whether it acts directly on the hepatic cells, or indirectly by altering the chemism of digestion. In either case the alcohol is the toxic agent and since it is introduced from without and is not generated within the body, it is not an autotoxin. As we have seen, alcohol, phosphorus and the metallic poisons, possibly also syphilis, malaria and other infectious diseases, are the most common factors in the causation of atrophic cirrhosis, and none of these are autotoxins.

Pathology.—Is the liver in the early stages of this form of cirrhosis enlarged? This question has met with

conflicting answers. Laennec believed that hypertrophy always precedes atrophy and this view is probably the one most generally held to-day. On the other hand, Todd taught that when uncomplicated with other diseases, the liver in this form of cirrhosis is never larger than normal, and that from the first it begins to decrease in size. Rosenstein says: "Es giebt eine genuine Schrumpfleber, das ist die atrophische Form. Kein Stadium der Vergrösserung geht hier voraus." However, it is difficult to answer those who believe in primary hypertrophy. They say that hospital cases are not seen until contraction of the proliferated connective tissue begins and circulation in the branches of the portal vein is more or less interrupted, and they admit that even in private practice this disease can not be diagnosed with any certainty until atrophy begins, and yet they contend that there is hypertrophy primarily. It will be seen that an argument of this kind can not easily be refuted. However, we may safely say that there is no marked hypertrophy; if there be any, atrophy comes soon, and, as has been stated above, before a positive diagnosis can be made. We have seen in experimental atrophic cirrhosis that destructive changes begin in the parenchyma before any proliferation of the connective tissue and that there is no stage of hypertrophy. There is probably no absolute, mathematical relation between the rates at which destruction of hepatic cells and proliferation and contraction of connective tissue take place; however, as the latter results from the former, it is safe to assume that the effect is in proportion to the cause.

The character and localization of the proliferation of connective tissue are interesting questions in the study of this disease. Charcot designates the disease as annular, because the larger bands of connective tissue encircle the parenchyma and smaller bands divide these areas into segments. He also characterized it as multilobular, because the encircled areas embrace many acini. Charcot believed that the disease is essentially a phlebitis or a periphlebitis of the intra-hepatic branches of the portal vein—a view which has been disproved by more exact observations.

Aufrecht holds that there is in reality no true proliferation of connective tissue and this view seems to be in all probability the correct one. His statements on this point are so important that I shall take the liberty of condensing them into the following: In order to explain the pathogenesis of this disease it is desirable to mention the fact that simultaneously with the extension of the interacinous tissue, there is invariably contraction of the acini. The one does not occur without the other. The degeneration of the hepatic cells, which is the primary phenomenon in the development of the disease, begins always in the periphery of the acini and extends towards the center, and the altered hepatic cells themselves constitute the greater portion of the interacinous tissue. If sections of a liver in this disease be prepared with the Biondi-Heidenhain triple stain the cells in the periphery of the contracted acini will be found reduced in size. Reduction in size is not the only change observable in these cells. They have become spindle-shaped and their nuclei have undergone an analogous alteration in form. The latter are stained blue, while the protoplasm has a reddish appearance. In many cells, the nuclei are no longer detected and the reddish cells can be seen matted together in the interacinous tissue. This author concludes from these findings that the increase in the interacinous tissue is not due to the proliferation of the connective tissue elements, but to its augmentation by the altered hepatic cells. He says furthermore: We have to do here with a process similar to that by which the cells of the rete Malpighii of the skin are converted into the scales of the epidermis. "In atrophic cirrhosis the contraction is not due to proliferation of connective tissue, but to the shrinkage of acini and groups of acini. The small, non-nucleated spindles, into which the peripheral hepatic cells are converted, occupy much less space than the normal cells." He adds: This picture is not infrequently clouded by the marked fatty degeneration of the remaining cells of the reduced acini or by an acute atrophy of the same. The first is relatively frequent, then there appears to be a sharp line of demarcation between the remaining hepatic cells and the interacinous tissue, when unstained sections, or those colored with other reagents than that above mentioned are examined. In these cases the transitional forms are not recognized. Acute atrophy of the remaining hepatic cells is relatively infrequent, but that it does occasionally occur may be recognized clinically, by the terminal icterus accompanied by marked ascites and prolonged coma, and microscopically, by the total disappearance of hepatic cells of normal shape. The so-called newly-formed biliary capillaries are observed very rarely in atrophic cirrhosis, but Charcot is in error, as Ackermann has pointed out, when he states that the absence of these is pathognomonic of this disease, and their actual appearance excludes the possibility of a true cicatricial process in this disease.

It will be seen from the statements already made, and the evidence might be multiplied several times, that recent investigations have established the essential identity of the changes observed in the cirrhotic atrophy of the liver seen at autopsy and the changes induced in animals experimentally by alcohol, phosphorus and the metallic poisons. The differences are those of degree and not of kind, and when we take into consideration the length of time that is required to induce this disease in alcoholics, the differences in degree are easily understood.

Symptomatology.—This disease advances at first insidiously and generally manifests itself by ascites, which is an early and constant condition. Subjective symptoms may be wholly wanting, and in any case are by no means characteristic. The ascites is due to obstruction to the flow of blood in one or more of the intra-hepatic branches of the portal vein. When the umbilical vein is not completely obliterated, and Baumgarten has shown that it frequently remains partially open, a collateral circulation may be established, and this leads to the appearance about the navel of what is known as the *caput Medusæ;* or anastomoses may be opened up between the portal vein and the inferior vena cava.[2]

In discussing the methods by which Nature attempts to establish a collateral circulation, Bamber says, "This is accomplished through the communication of the internal hemorrhoidal with the hemorrhoidal branches of the hypogastric vein, or by anastomoses between the vessels of Glisson's capsule and the diaphragmatic vein, also through the superior gastric and the esophageal and through this with the azygos." Edema of the lower extremities may appear, but seldom does so until late in the course of the disease.

2. It might be noted that in very rare instances the inferior vena cava has been found to be strangulated by bands of connective tissue in the liver.

The spleen is generally enlarged. Whether this is due wholly to obstructed flow of blood through the liver or to coincident disease of the spleen can not always be determined.

Structural disease of the kidney is not a frequent accompaniment of atrophic cirrhosis, although albumin and casts may appear in the urine, and Semmola has reported the presence of peptone. In cases in which the ascitic accumulation is great the volume of urine is diminished, but according to Aufrecht this condition is attributable to weakened action of the heart. Semmola very properly, it seems to me, emphasized the desirability of making frequent quantitative determinations of the amount of urea, which is eliminated in reduced amount on account of the destructive changes in the hepatic cells, since these are concerned in its formation. However, such determinations are of no value unless strict account is kept at the same time of the amount of nitrogenous food ingested. With the decrease in the amount of urea eliminated in the urine there should be a corresponding increase in the amount of ammonia, and this condition has been reported by Halevoorden and Stadelmann, but I know of no exact scientific research on this point. It is believed by physiologists that one of the antecedents of urea is the carbamate of ammonia which normally is converted in the liver into urea; consequently, when a large proportion of the heptatic cells is diseased the amount of urea eliminated should be decreased and that of ammonia correspondingly increased.

There is generally a catarrhal condition of the digestive tract. Indeed, in most cases of atrophic cirrhosis, this disturbance of the stomach and intestines precedes the development of the changes in the liver, and is due to the same cause, i. e., alcohol. Hematemesis is not unusual, especially in alcoholic cirrhosis. The causes of frequent hemorrhages from the stomach may be stated as follows: 1, as has been stated, the digestive organs are already diseased from the local action of the alcohol; and 2, interruption of the flow of blood through the portal vein leads to distension of the gastro-intestinal radicles of this system. Not infrequently the hemorrhage is esophageal, and this is explained by the dilatation of the veins of the esophagus, through Nature's attempt to establish collateral circulation after the manner already mentioned.

Icterus is an unusual manifestation of this disease in uncomplicated form. The hepatic cells being diseased, it is probable that there is diminished formation of bile pigment, and the gall ducts being usually unaffected, there is free escape *per vias naturales* for all that is formed. During the later stages of the disease jaundice may appear and possibly be quite marked. This is supposed by some clinicians to indicate acute atrophy and it is often accompanied by coma.

HYPERTROPHIC CIRRHOSIS.

Gross Appearance.—The liver is always enlarged and may be enormously so, weighing in some rare instances as much as nine or ten pounds. The surface is finely granular and brownish or reddish in color. Adhesions to adjacent organs are frequently seen. In consistency the tissue of the liver is firm and may be very hard. Freshly cut surfaces are granular and of varying color, depending upon the proportion of bile pigment staining the organ.

Etiology.—There has been practically no scientific investigation into the causative agents concerned in the production of this disease; however, most clinicians now agree that it is of infectious origin, which view was, so far as I know, first suggested by Senator. I know of no thorough bacteriologic study of this condition; but the colon and typhoid bacilli are regarded as the most frequent infections, although a coccus, not yet well studied, has been found in some instances. Frequently both the bile and the liver tissue have been reported sterile, but since Adami has shown that it often requires many days for the development of germs actually existing in tissues, such evidence is not of value. Moreover, the bile may be actually sterile at a time when the tissue surrounding the ducts is undergoing most destructive changes through the agency of bacteria. The possible avenues of infection are from the intestines, through the gall passages and through the blood and lymph. The probabilities are that infection generally, if not invariably, comes from the intestines and is due to the extension of catarrhal conditions or to the passages of specific organism up the biliary tract. The frequency with which the typhoid bacillus finds its way into the gall bladder and its persistent growth in this viscus, has been attested by more than one observer.

Clinicians agree that alcohol is not a direct causative agent in this disease. Certainly hypertrophic cirrhosis may be developed in alcoholics, but quite as frequently it appears among those who have not abused this beverage. Indirectly, by causing irritation of the mucous membranes of the stomach and intestines and by converting this tissue into suitable culture beds for the growth of bacteria, alcohol may sometimes be a factor in the causation of this disease, just as it may play a similar rôle in the development of many other infectious diseases.

There is no sufficient reason for believing that any chemical poison, except bacterial toxins, are concerned in the causation of this form of cirrhosis. With our present knowledge it must be attributed in all cases to infection. While, as has been stated, the experimental proof of the bacterial origin of hypertrophic cirrhosis is largely wanting, the conclusion that it is due to infection is so well founded that much contrary evidence of the most positive character would be required to cast doubt upon this view. The evidence on this point may be briefly summarized as follows: 1. It frequently begins like an ordinary catarrhal jaundice, which seemingly becomes chronic. 2. It is often, if not invariably, accompanied by cholecystitis. 3. It is essentially a febrile disease with periods of remission and exacerbation. 4. It is accompanied by enlargement of the spleen and many of the lymphatics, as is the case in some of the infectious diseases, and, moreover, the enlargement of the spleen is not that due to obstructed blood flow, as is the case in atrophic cirrhosis, but appears to be similar to, if not identical with, that observed in other infectious diseases. 5. The primary changes occur in the epithelium of the gall ducts, where they would naturally be found by extension of the disease process from the intestines up through the biliary tract.

Pathology.—While there have been some differences of statement among those who have studied microscopically the changes in the liver in this disease, there seems now to be reasonable agreement on the essential points, which may be condensed as follows: 1. There are no destructive changes in the hepatic cells. According to Hanot, the integrity of the parenchyma is an absolute characteristic of hypertrophic cirrhosis. Some observers find no destructive changes in the hepatic cells,

but do find evidence of unusual growth in this tissue. Ziegler says, "The size of many of the nuclei and their richness in chromatin, together with the size of the cells themselves, make it probable that in this disease there is proliferation of the hepatic cells and that the colossal size reached by the liver is not solely due to the proliferation of the connective tissue." Heineke states: "In the cirrhosis of Hanot the hepatic cells remain intact, neither shrunken nor fatty; the nuclei are normal and stain well; indeed, actual proliferation of these cells may be observed." Aufrecht makes the following statement: "It is an evident characteristic of hypertrophic cirrhosis that all the hepatic cells are enlarged and contain a larger number of nuclei than under normal conditions. In these changes lies the criterion of hypertrophic cirrhosis." While all agree that the primary changes do not occur in the hepatic cells, there are those who think that destructive changes may result secondarily in the parenchyma. This opinion is held by Heineke, who states, "Primary degeneration of hepatic cells is with certainty excluded in Hanot's cirrhosis; indeed, the first proliferation processes do not occur in the vicinity of the lobules, but in Glisson's capsule and in the region of the larger gall ducts. The hepatic cells in most cases remain unaltered, and it is so constantly the case that Hanot and Schachmann insist that integrity of the parenchyma is an essential condition in hypertrophic cirrhosis with icterus. However, because primary degeneration of the hepatic cells does not occur is no guarantee that these cells always escape secondary effects. Conditions influencing the parenchyma may co-exist with those resulting in hypertrophy, and, indeed, may affect the part most highly involved in the hypertrophic process, but when the parenchyma does undergo destructive changes atrophy, or at least a decrease of the hypertrophy, must result." If I understand Heineke aright, he believes that the two processes (that of hypertrophy of the connective tissue and that of atrophy of the parenchyma may co-exist in the same liver; this amounts to mixed cirrhosis, to which I shall return later.

2. The primary changes in the development of this disease occur in the epithelial cells of the gall ducts. On this point there is some diversity of statement; certain observers have reported most extensive and destructive changes in the epithelium, while others have found evidence of pericholangitis, with the epithelium of the ducts intact; but when we remember that this disease may continue from one to eight or ten years before it causes death and that during its course it shows marked exacerbations and remissions, it is no longer a matter of surprise that the condition of the epithelium in microscopic sections is by no means constant. Hanot generally, not invariably, has found characteristic lesions in the gall ducts, with proliferation and desquamation of the epithelium causing obliteration of the lumen. The fact that icterus is one of the earliest manifestations of this disease and that this symptom continues to the end *pari passu* with the exacerbations and remissions, is strong proof of the early and constant involvement of the epithelium of the ducts in the inflammatory changes, because the icterus is best explained by the occlusion of the ducts. On this point Hanot remarks, "The lesions of the bile ducts and their more or less extensive obliteration by the young proliferating cells, together with the chronic inflammation of the surrounding tissue, by obstructing the flow of the bile, must be considered as the causes of the icterus." Heineke, after quoting the above from Hanot, adds, "I have found similar destructive changes in the epithelium in most of my cases. Besides occlusion of the ducts by desquamation of the cells, another hindrance to the flow of bile may b found in the formation of deposits in this fluid and consequent thickening of the same by inflammatory processes. Actual compression of the ducts by contraction of the connective tissue may occur in the later stages of the disease." It is a fact established by observation and experiment that certain bacteria multiply in the bile of the gall bladder, causing the formation of deposits, and that gall-stones originate in this manner has been quite conclusively demonstrated by Naunyn.

3. The tissue about the branches of the portal vein largely escape involvement in this disease, or are affected only late in its course. This explains the infrequency of ascites in hypertrophic cirrhosis.

Symptomatology.—This disease most frequently appears in persons under 40 years of age. Enlargement of the liver and icterus are the first prominent symptoms. Ascites is rare and is not marked when present. The causes of the presence of icterus and the absence of ascites I have already discussed. The disease generally runs a chronic course, with periods of exacerbation and remission which are accompanied by a rise and fall of temperature. As the disease progresses anemia and emaciation are marked and disturbances of the digestive organs become more prominent. The spleen and many of the lymph glands are enlarged. The urine is stained with bile, and the feces are generally normal in color, but may be colorless. Toward the close the patient may pass into a typhoid condition with marked fever and delirium.

CONTRAST AND COMPARISON OF THE TWO DISEASES.

Atrophic cirrhosis is sometimes designated as the cirrhosis of Lænnec and the hypertrophic disease as the cirrhosis of Hanot. The former is known as atrophic cirrhosis because from its earliest possible recognition the liver is less than normal in size; while the hypertrophic is known as such because at every stage of the disease the liver is larger than normal.

The atrophic is known as venous cirrhosis because of the early and constant involvement of the intra-hepatic branches of the portal vein; the hypertrophic is known as biliary cirrhosis because of the early appearance and constancy of icterus. The former might be known as toxic, and the latter as infectious cirrhosis.

In the atrophic disease, ascites is an early manifestation and is often marked; in the hypertrophic, ascites is frequently absent and is never great. In the atrophic, icterus appears late, if at all; in the hypertrophic, icterus appears early and is constant.

Finally, in atrophic cirrhosis the primary destructive changes are in the hepatic cells; in hypertrophic cirrhosis the epithelium of the gall ducts is the site of the primary involvement.

MIXED CIRRHOSES.

From what has been said concerning the etiology and pathology of these diseases, it must be evident that their co-existence in the same individual may be seen. As has been stated, alcohol is the most frequent cause of atrophic cirrhosis and indirectly it may contribute to the causation of the hypertrophic disease. If all cases seen clinically were well-marked, typical forms of either disease, diagnosis would not be difficult, but

unfortunately this does not always occur. There are many well-marked cases of each disease and there are others which confound alike the clinician and the pathologist; many of these are undoubtedly due to the coexistence of the two diseases in the same individual. An infection may follow or precede an intoxication.

ADDENDUM.

While it was not my intention to say anything concerning the treatment of either of these diseases, I must be pardoned for adding just a few words on this subject. In atrophic cirrhosis the first thing to do is to discontinue the cause of the trouble, which, as we have seen, is most frequently alcohol. I will say nothing concerning the treatment of symptoms, but I do want to state that the pathologist has abundantly shown that when the cause is removed hepatic cells, even though undergoing marked fatty degeneration, may recover themselves. In my opinion the only scientific treatment for atrophic cirrhosis that has been proposed is that of Semmola, who reduces the amount of food to a minimum and administers this in a form least likely to tax the hepatic cells. He confines his patients to the use of milk, or when this is impossible, to milk and eggs. Digestion may be aided by the administration of dilute hydrochloric acid, and the action of the stomach may be improved by giving bitter tonics. The bowels should be kept in good condition, and this is best accomplished in this disease by the use of mineral waters. The heart must be watched and the administration of digitalis is often indicated.

In the treatment of hypertrophic cirrhosis small doses of calomel administered according to the method of Nothnagel have probably given the best results. When there is obstruction of the common duct, or when there is stone in the gall-bladder, surgical operation is clearly indicated, and I am inclined to the opinion that the time will come when surgery will be relied upon in the treatment of all cases of hypertrophic cirrhosis, inasmuch as it is possible only by operation to reach and disinfect the biliary passages.

For the purpose of saving space, I have refrained from giving the literature on cirrhosis of the liver, and I will refer those interested in the subject to the 13th volume of the "Real-Encyclopädie der gesammten Heilkunde," in which will be found an article by Aufrecht, followed by a fairly complete list of references up to the time of writing—1897.

ON THE TREATMENT OF CIRRHOSIS OF THE LIVER.*

J. H. MUSSER, M.D.
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Cirrhosis of the liver—often called alcoholic cirrhosis—is seen under the following circumstances: 1, without symptoms, the patient having died from other causes; 2, without symptoms until a climax is reached in the sudden outbreak of gastric or intestinal hemorrhage, terminating the life of the patient; 3, with symptoms due to obstruction of the portal vessels; 4, with those due to catarrh and obstruction of the bile ducts; 5, with combined portal and duct symptoms; 6, in very rare instances, a certain ill-defined cachexia, symptoms of auto-intoxication and the physical signs of a contracted liver, may suggest in a patient of alcoholic habits the presence of this form of cirrhosis. We will defer the consideration of the symptomatic treatment until a later portion of the paper.

The morbid process in alcoholic cirrhosis is clearly defined and if the diagnosis of the first stage, so-called, could be positively determined indications for treatment to combat this process are manifest. Knowledge of such process would lead us at once to suggest control or removal of the cause; regulation of the duty to remove undue stress of work of the organ; proper clothing to prevent congestions of viscera; climatic influences for a similar purpose; regulated exercise and an outdoor life after the more acute congestion has subsided, again to prevent internal congestions. In the more acute periods, absolute rest, hot baths, hot fomentations or douches, alternating hot and cold fomentations, or, if perihepatitis, ice to the surface. Blisters are often not amiss; dry cups are of the greatest advantage, relieving pain and the sense of fulness the large organ gives rise to. Depletion of the intestinal tract by means of purgatives can aid wonderfully and must be resorted to, the salines being preferable. Many therapeutists are fond of flushing the liver by draughts of hot water taken in the fasting stomach. Finally the enlarged organ should be supported by a properly fitted abdominal bandage.

The character of the process of the next stage does not give encouragement for direct treatment. It is doubtful if any method of medication can arrest or mitigate the process. The lines of hygienic, dietetic and climatic treatment suggested above may measurably lessen the rate of growth of the exuberant tissue and lessen the tendency to catarrh of the ducts. That nature sidetracks the organ is seen in the cases which have proceeded to great length without any symptoms. It is reasonable to suppose the efforts carried out as described above contribute to this end and make an environment of the economy, compatible with the presence of a diseased organ.

But no treatment of a process can be thought of that does not include the oft-called etiological treatment. This has been hinted at in considering the management of alcoholic cirrhosis. Similarly, if we suspect a sclerotic process secondary to organic heart disease, the treatment of the antecedent condition is essential. Indeed, even though the symptoms are not patent, in organic heart disease all management looking to the prevention of sclerosis must be conducted. If we find again syphilis can be invoked as causal, we have other plans of medication to take up, which in time arrest or assuage the process.

The Symptomatic Treatment.—It is evident cases of the first score can not be included in any scheme of treatment; cases of the second score, if they survive the outbursting symptom of the process, must be managed according as they fall into the remaining classes. Cases belonging to the third class fall to our lot for medical treatment more frequently than any other class.

Portal Obstruction.—It will not be necessary to outline to an audience of the practical and scientific acumen of this Section, the methods of treatment, either of the gastritis and the enteritis or the secondary effects thereof. Such treatment is based on such general and established lines that methods are beyond cavil. A word of caution is not unnecessary regarding the treatment of hemorrhoids. This venous condition is frequently a result of cirrhosis, and it is well known is attended by such state of tissues that invite infection. I have seen disastrous results follow a more or less rash, and, perhaps,

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septic operation. Of course, a cure is not so readily obtained as in other forms of hemorrhoids.

Ascites.—Again it is not necessary to rehearse the broad methods of treatment by diuretics, diaphoretics and purgatives, which are the common property of us all, the principles guiding us in their use as well as the hygienic management being well known. I wish by permission, however, to make record of some drugs which have been of service in my experience and some methods which must be resorted to before we dare cry "quits." Of the drugs, I would mention calomel. Small doses, frequently repeated, act well as a diuretic and can be relied on in many instances in which the stimulating diuretics, as caffein, strophanthus and other forms have failed. One-tenth of a grain every three hours is a dose which in four or five days brings on diuresis and gradual reduction by this means, and perhaps by absorption of the fluid.

Apocynum cannabinum, in doses of fifteen, twenty or thirty drops, four times daily, has in my hands proved valuable in reducing the ascites. It will often act as a purgative, a not necessarily desirable effect, which can, however, be controlled by regulating the doses. The oleoresin of copaiba, in capsules of ten minims every four hours, has also proved efficient in my hands. If not contraindicated by gastric or intestinal conditions it is often the most satisfactory.

Often medication will not relieve the ascites so that the fluid must be removed. We must not postpone the operation. A too great faith in medication, when kept up too long, permits pressure effects of the ascites which are not desirable, and also invites chronic peritonitis. Delays are dangerous. Tapping, to remove the fluid, should be resorted to early; and it should be done as frequently as the fluid forms. Nature taps often by allowing the water to break the thin umbilical bounds and ooze from the wound. Who has not seen the aspiration hole leak and leak until all fluid is drained, and perhaps remains away? I have seen ascites cured and the cirrhotic process arrested after the one hundred and fiftieth tapping. A cure is recorded of a case which was tapped more than 200 times. If tapping becomes impracticable, as sometimes occurs from thickening of the peritoneum, abdominal drainage must be resorted to. The cures are not as brilliant as in tuberculous peritonitis treated in this manner. Nevertheless, great danger lies in harboring an unusual amount of fluid. Again, if relief is not afforded, laparotomy and stitching the omentum to the anterior abdominal wall, establishing a collateral circulation, must be resorted to. The brilliant results of Frazier and other recent operators establish the feasibility of the operation.

Obstruction of the Biliary Passages.—Here again for reasons previously outlined, it is not necessary to dilate upon methods of treatment. I would call attention to the necessity of resorting to surgical relief in cases of obstruction with cholangitis and cholecystitis. A private patient, age 54, with alcoholic cirrhosis of the liver, cholangitis and cholecystitis, suffered from rigors and fever every week, the violent and most prostrating paroxysm, bringing him almost to death's door each time. Professor Martin drained the gall-bladder, giving entire relief to the symptoms and prolonging life nine or ten months. A large experience with these cases leads me to advise such operation early in the disease.

DISCUSSION ON SYMPOSIUM ON SOME CIRRHOSES OF THE LIVER.

DR. FRANK BILLINGS, Chicago—There is no doubt but that in hepatic cirrhoses prominent symptoms may occur from what Dr. Stockton has indicated, first of all, from the obstruction to the circulation which manifests itself in ascites, or in dilatation of the veins, forming a collateral circulation, the ascites not appearing, but the intoxication occurring, especially in the atrophic form. Dr. Stockton has fully brought out this point. There are, however, points for discussion upon the cirrhoses considered from a clinical point of view. I have been surprised in the ordinary practice of medicine to find how frequently one discovers cirrhosis of the liver that is not advanced enough to produce either an ascites, nor, probably, a classic intoxication such as Dr. Stockton has indicated. There is a cirrhosis of the liver which can be detected by palpation; ordinarily one can not feel the liver and recognize it in the healthy state, everything else being equal; but when that liver becomes cirrhotic we may detect its edge. I have been surprised to find a large number of ambulatory cases in which the liver was palpable.

Dr. Musser has referred to congestion of the rectum being present in cirrhoses of the liver without there being visible hemorrhoids; in this the cirrhosis of the liver is sufficient to produce a slight mechanical effect upon the circulation, producing a proctitis, or, at least, producing enough congestion to cause bearing-down pains and pressure. This I have frequently seen, and I have frequently prevented surgical operation by medical treatment directed to the liver, which caused the hemorrhoids to disappear.

There is a form of cirrhosis of the liver that has passed the beginning stage, which has some relation to intestinal intoxication; it certainly has some relation to intestinal disturbances. For, if one places a case of that kind under good hygienic surroundings, with a proper selection of food, with attention to the excretions of the body, and especially to the unloading of the portal circulation by some simple means, the palpable liver will soon cease to be palpable. Years ago—nearly twenty years ago, I think—I read an interesting paper by Kussmaul upon muriate of ammonia; he administered this in the early stages of hepatic cirrhoses, claiming that it prevented proliferation of the connective tissue cells and so cured the cirrhoses in the early stages. Since then I have used muriate of ammonia in many cases of liver cirrhosis with the result that the induration has diminished and even disappeared. Perhaps the hygienic measures coincidently practiced may have produced the good effect ascribed to the drug.

Associated with mild cirrhosis of the liver there are symptoms of intoxication differing somewhat from those mentioned by Dr. Stockton. Many patients complain of lumbago-like symptoms; others of sciatic pain; others of musculo-spiral pain. They have this autointoxication, but it is not associated with drowsiness and hebetude, such as appears in true intoxication due to cirrhosis of the liver. In many of these cases I have found a hard, palpable liver, and, under the treatment mentioned, the symptoms have disappeared.

DR. JAMES B. HERRICK, Chicago—We have heard much from Dr. Musser and from Dr. Stockton regarding the treatment of cirrhoses of the liver and they have dwelt upon the treatment of the milder cases of this disease, or the treatment of the disease in its incipiency. It is an extremely hazardous thing to venture a diagnosis upon symptoms of "biliousness," and yet the more one studies these cases the more one is inclined to view "biliousness" as an important diagnostic aid. A patient with coated tongue, headache, who is drowsy, with alimentary disturbances, with a sense of weight or pain in the right hypochondriac region, with a palpable liver, who is alcoholic, perhaps with hemorrhoids, can be suspected of having an incipient cirrhosis of the liver; and if there is any time in the history of this disease when we can do any good it is in the beginning. It has been my experience to see a few of these cases that have improved under treatment and I have ventured to place upon the history sheet, with an interrogation point after it, "beginning cirrhosis of the liver." Proper diet, with attention to the alimentary canal, and the giving of laxatives seem to do the most good. I have used, empirically, muriate of ammonia, because Dr. Billings had told me of his experience with it, and I wish to confirm what he has said in regard to its efficaciousness in these cases. Another remedy

that I have used, in a measure empirically, is the salicylate of sodium.

Musser has referred to several cases in which operation has been successful. I have never been convinced of its advisibility in all cases and I would not advocate an operation save in exceptional instances. Not long ago I had a very instructice case occurring in a patient with atrophic cirrhosis of the liver. He was about the wards of the hospital for months. He had an ascites which was repeatedly tapped but it as often recurred. This patient was bothered a great deal by a large umbilical hernia which one day became strangulated. He was removed to the surgical wards and an operation was performed successfully. At the time of the operation a large amount of ascitic fluid was released. The liver was examined by touch and sight and found to be a typical one of atrophic cirrhosis. After the operation that man never had a recurrence of the ascites. One year later he died of pulmonary tuberculosis.

Dr. Musser has referred to chills and fevers. The most typical case of chills and fever ever seen by me was in a patient in whom there were daily paroxysms, and these paroxysms lasted for many months; this was a case in which I believed there was a hypertrophic cirrhosis of the liver with jaundice. The patient died from hepatic intoxication. An operation had been advised but was refused by the patient. Punctures of the liver revealed no pus and no micro-organisms. There was no reason to suppose the patient had gallstones. There was no malaria present. That chills and fever do occur in cirrhosis of the liver has been shown by quite a number of writers. Riva, for example, has dwelt at length upon the occurrence of chills and fever in cirrhosis of the liver and in syphilis of the liver.

Dr. Futcher's paper was very complete and it deserves discussion, but I do not feel competent to discuss it because I have never seen a case of hemochromatosis, except one—perhaps the case he referred to—shown by Dr. Osler at another Association. The thought has occurred to me whether or not there could be any connection between the purpura and the cirrhosis of the liver. Is the purpura the result of a toxemia or it it possible, on the other hand, that the repeated extravasation and disintegration of the blood can give rise to pigment and secondarily to the cirrhosis?

There is a cirrhosis of the liver called by the French a "mixed cirrhosis." We have cirrhoses of the liver that are clearly recognized, clinically and postmortem, as atrophic cirrhoses; on the other hand, we have cases that are just as clearly hypertrophic cirrhoses. I know that in practice I am frequently in doubt as to what name I am to apply to a given case of cirrhosis of the liver, for, in many cases, some features are those of the atrophic form and, in others, of the hypertrophic form. I have found that, in many cases, even the pathologist is in doubt, even when he has made a microscopic examination, because certain pathological findings are found that fit in with the atrophic form, and others that fit in with the hypertrophic form of cirrhoses. The French have described a "mixed cirrhosis" and it seems to me not only a convenient term to apply but one that is justified on clinical and pathological grounds. Patients who are jaundiced for three or four years, having frequent attacks of "biliousness," who become weak and lose weight, whose livers and spleens are enlarged with symptoms that denote obstruction to the portal circulation, we say are subjects of hepatic cirrhosis, and they die of hepatic intoxication. Such cases present some features of both forms of the disease; they are really "mixed" forms of cirrhosis.

Dr. Musser has also referred to the importance of hemorrhoids in cases of cirrhosis of the liver. I should also like to say, aside from the subject, that one should never forget to make a rectal examination for carcinoma of the rectum in cases of hemorrhoids.

Dr. William E. Quine, Chicago—The feature which has directed my attention more frequently than any other in this connection is one concerning the early identification of cirrhosis of the liver before ascites has made its appearance. Those of us who have been long engaged in the practice of medicine were taught that the identification of cirrhosis of the liver could not be made with any degree of certainty before ascites had made its appearance, but increasing experiences of this kind have taught us that an array of phenomena ordinarily makes its appearance pointing to its possibility and the diagnosis of chronic interstitial hepatitis may be safely predicated; there are evidences of auto-intoxication connected with the establishment of the collateral circulation which permits the blood from the gastro-intestinal canal to gain an entrance to the systemic circulation without passing through the liver; this furnishes by far the most important and striking of these phenomena. The symptoms have already been dwelt upon with a sufficient degree of minuteness which obviates the necessity of referring to them again. Dr. Stockton has directed attention to the liability of gastrorrhagia, associated with evidences of diminution in the size of the liver and more or less enlargement of the superficial veins of the abdomen. In the absence of ascites and the presence of these other phenomena he was able to predicate with some precision the liability of the occurrence of gastrorrhagia. This is a point in the early diagnosis of chronic interstitial hepatitis that is entirely new to me, but I am now ready to expect it and I have no doubt whatever, as I ruminate upon my own experience, that it is a point of value.

In relation to the treatment of cirrhosis of the liver, and particularly to the early treatment of it, my experience has been similar in kind to that of some of the gentlemen who have spoken and to some of the essayists who have introduced a consideration of the subject. I have never known any diuretic to make any impression whatever upon the ascites of cirrhosis of the liver. So far as I know the administration of such diuretics as digitalis, squills, calomel, or blue-mass, or any of those mentioned, uniformly fails to make any impression whatever upon the clinical course of the disorder. I have used the chlorid of ammonia. During the whole of my professional career, until quite recently, I have treated these patients exclusively upon the basis recommended by German writers. Unlike my esteemed colleagues I have never found any remedy which was of value in the early treatment of cirrhosis of the liver such as they claim for chlorid of ammonia. It is a medicine of very small utility. So far as any medicinal treatment of this disease is concerned the most efficacious consists, in my opinion, in the administration of moderate doses of hydragogue purgatives with a view of depleting directly and persistently the portal circulation. An auxiliary is to be found in the application of a firm bandage to the abdomen.

In my experience the omission of the application of a firm bandage immediately after the abstraction of the ascitic fluid by tapping or aspiration is a step that no practitioner can well afford to omit. The systematic and thorough bandaging, I do not hesitate to say, lessens the rapidity with which the ascitic fluid returns and, I have thought, increased the rapidity with which the collateral circulation is established.

I have had no experience with the establishment of permanent drainage, but it is a procedure which commends itself to me. I have had but little experience with the operative treatment of ascites due to cirrhosis of the liver. The case referred to by the speaker who just preceded me came under my notice after it had been operated on; it was one in which an operation was demanded in the course of a cirrhosis of the liver by reason of the occurrence of a strangulated umbilical hernia. In one other case that came within my knowledge the operative treatment for cirrhosis of the liver was promptly successful. If I was asked to choose now between these methods of operative treatment I should have recourse to permanent drainage before undertaking to establish vascular connections between the omentum and the parietal peritoneum, or between the omentum and the peritoneum lining the undersurface of the diaphragm.

Dr. William Bailey, Louisville, Ky.—In most of these forms we have gastro-intestinal disturbances which must be controlled by abstaining from alcohol, by proper dietetic regime, etc., and I am sure that by the administration of such remedies as phosphate of sodium, muriate of ammonia, etc., we shall

accomplish some good. Where there is auto-intoxication, instead of giving the mild chlorid, I believe in the use of the bichlorid on account of its disinfecting influence upon the gastro-intestinal canal. That canal should be drained by means of saline cathartics, such as phosphate of sodium. I have had no experience with the surgical features, except by tapping. The circulation in the liver is better after tapping and drainage; therefore, I do not think we should allow the pressure to exist which comes from the increased accumulation of the fluid.

DR. O. T. OSBORNE, New Haven, Conn.—I think we should be somewhat chary in making a diagnosis of beginning cirrhosis of the liver with simply the so-called bilious symptoms; we may have conditions of biliousness in intestinal indigestion, with headaches, etc., in which there may be some congestion of the liver which will give a slight enlargement that is not at all a beginning cirrhosis of that organ. Many cases that are treated as a gastritis are really trouble in the duodenum, and I think inflammation of the duodenum is of frequent occurrence. For a long time ammonium chlorid has been supposed to be almost a specific in inflammations of the mucous membranes of the air passages, but I believe that it is just as specific for inflammations of mucous membranes anywhere. If there is a catarrhal inflammation of the gall ducts giving symptoms of biliousness it is certainly well treated by this drug; it improves the condition here in the same way that it betters a bronchial catarrh. The congestion in the duodenum, or in the ducts, give a diminution in the amount of bile which should be thrown out into the intestine; therefore, we must get intestinal fermentation and an intoxication causing the bilious condition. Now, we know that salicylic acid is one of the best antiseptics that we have; hence, this drug would be a correct treatment.

I can not help but ask a question in connection with the treatment by anastomosis. We know that, in cases of tuberculosis of the peritoneum with a large amount of ascitic fluid, simply opening up the abdominal cavity is productive of great good. I should like to ask how much the opening of the abdomen and how much the anastomosis had to do with the good results obtained in the case reported by Dr. Herrick?

DR. ROBERT B. PREBLE, Chicago—I should like to speak of a limited experience with the Talma operation. I have found in the past four years but two cases of atrophic cirrhosis in which operation seemed to be justifiable; one of these died immediately from the effects of the operation, and in the other, the operation did not produce any beneficial effect. Since the operation the second case has been tapped at intervals of ten to fourteen days and, so far as can be seen, there has been no effect except that upon the abdominal wall there is now developing a fairly well-marked collateral circulation which was not present before the operation. I have seen but one case in which the operation was followed by brilliant results.

I wish to question a statement that has been made in reference to the presence of hemorrhoids. Lécorché has stated that hemorrhoids are not more common in cases of atrophic cirrhoses than in patients in general. When I first read this statement I was very much surprised, but since then I have particularly inquired into this question and I must confess that it is a correct statement. Hemorrhoids are not more common in atrophic cirrhosis of the liver than in patients in general.

Gastric hemorrhages due to atrophic cirrhosis are more common than formerly supposed, although strictly speaking these hemorrhages are not gastric; a better term would be "esophageal." A very small portion only of the hemorrhages are from the stomach, but it comes from the veins above the cardiac end of the stomach. The lower end of the esophagus bears somewhat the same relation to the portal circulation as does the rectum; the blood there fuses in somewhat the same way with the systemic circulation as it does about the rectum, although the physical conditions are different. The veins of the lower end of the esophagus are within the thorax, and the abdominal are not. With each inspiration a negative pressure is created within the thorax and in a way aspirates the blood directly from the portal veins into those above the diaphragm. This would favor the development of anastomoses between the veins of the stomach and those of the esophagus, so much so that we would expect the varices to be more common in the esophagus than they are. It is easy to see how the veins of the esophagus could be injured by the passage of a rough bit of food or some instrument and hemorrhage result.

It is extremely difficult to differentiate these hemorrhages from those occurring in ulcer of the stomach. I have had a personal experience in five cases in which such hemorrhage occurred and all had these points in common: all were beyond 40 years of age, one being 55; all were addicted to the use of alcohol; all were taken with hematemesis when at work and there were none of the ordinary symptoms of gastric ulcer present. After the occurrence of the hemorrhages they all died, and it was then found that the source of the hemorrhage was an ulcer of the stomach.

DR. G. W. MCCASKEY, Fort Wayne, Ind.—I wish to mention a case which, according to the facts stated by Dr. Musser, comes close to the "high-water mark" with reference to the number of tappings for ascites. The patient was under the care of my colleague, the late Dr. James S. Gregg of Fort Wayne, and during my association with him in the case about one hundred and twenty aspirations were made. The patient then removed to Chicago where frequent tappings were kept up until his death two or three years later and it is probable that he was tapped one hundred and fifty times.

Concerning the etiology of cirrhosis of the liver, I wish to emphasize the importance which I attach to clinical observation of primary disease of the gastro-intestinal tract. There is a large group of cases which I believe, as stated by one gentleman in this discussion, have their origin in these conditions. While the statement is not susceptible of demonstration, I believe it is a fact that in the majority and perhaps in all cases of chronic gastro-intestinal disease we have at least an initial cirrhotic condition of the liver. Boix, in his little brochure on the liver of dyspeptics, says, if I remember correctly, that it is not so much the result of the alcohol as of the gastritis and enteritis due to the alcohol. My own observations in dealing with a large number of chronic cases of this character leads me to practically the same conclusion. Of course, there are other causes for cirrhosis of the liver which I will not consider.

DR. CLARKE GAPEN, Madison, Wis.—I do not believe that anyone can fail to be interested when he takes up the subject of ptomains and notes the enormous number of new clinical combinations that are produced as the result of decompositions occurring in the intestinal tract, some innocuous and others exceedingly poisonous. In investigating this question I have come to the conclusion that, in nine out of ten cases, the true explanation of the so-called liver of intoxication is the development of some of these poisonous substances which are absorbed into the blood and so find their way to the nervous system and liver tissue and so produce their effects. Therefore, as the result of my own experience, I have, for some time past, pursued a treatment that was directed towards the prevention of such decompositions and the elimination of their products. One gentleman has alluded to the salicylate of sodium as being of value in these cases and I have no doubt of his correctness, but I have found that this agent is exceedingly irritating and decomposes in the upper alimentary tract and so is liable to aggravate the condition. I remember a case occurring two years ago which had resisted almost everything; it was characterized by alternating constipation and diarrhea with offensive stools, etc. In this case I used guaiquin, which is a combination of guiacol and quinin, and within three days all the symptoms disappeared. I think that of all remedies pure water in large quantities is the most effective. This idea was suggested to me by the methods in vogue at one of the noted mineral springs of this country. The patient there is directed to drink two glasses of water; then walk a mile; then drink two more glasses, and walk a mile; and this is kept up until the alimentary canal is washed out and the toxemic symptoms disappear. I give water in these cases with the

principle in view that if water is poured in at the top of an open tube it will run out at the bottom. I have had, recently, two cases in women who were profoundly bilious subjects and who presented symptoms of so-called liver toxemia whom I treated in this way with great benefit. The relief of the constipation was not sufficient in either of these cases. in both, however, I gave benzozol, which breaks up in the lower part of the alimentary tract well down in the small intestine; guaiquin will also do this and is an excellent tonic remedy as well as an intestinal antiseptic.

DR. GEORGE W. WEBSTER, Chicago—I wish to call attention to one or two symptoms occurring in those cases where there is a considerable collateral circulation established, and in which ascites develops suddenly. If the belly be tapped the fluid rapidly refills and the patient goes on to a rather speedy death in spite of the treatment. During the past two years I have seen two cases which came to autopsy. In one there was no ascites at first but there was a large collateral circulation established; later ascites occurred very suddenly; the patient was tapped, but within thirty-six hours the enlargement of the abdomen was as great as it was before; the fluid reaccumulated in spite of frequent tappings, and the patient died within six weeks.

In another case, there was a fair amount of fluid in the abdomen, but very little collateral circulation. In this case, too, there was a very rapid re-accumulation of fluid, the abdomen refilling within thirty-six hours after tapping. A thrombus of the portal vein was found at the postmortem in both these cases. I think it was Welsh who first called attention to this point.

It has been my experience to find that the inferior hemorrhoidal veins are enlarged; but more often there is an enlargement of the veins in the lower end of the esophagus. All of these cases have gastro-intestinal symptoms and many times patients come to the physician for treatment of some stomach trouble and it is very common for them to receive such routine measures as the Ewald test breakfast with washing out of the stomach; the introduction of the stomach tube has often been followed by fatal hemorrhage. Therefore, one should be very careful not to permit instrumentation of the esophagus in cases where we suspect varicose veins.

DR. W. H. NEILSON, Milwaukee—I am disappointed in the fewness of allusions made to the treatment of hypertrophic cirrhosis because our patients certainly suffer greatly from the nervous phenomena, the itching, and the other symptoms that are produced by the presence of bile, and yet we are not able to find any treatment for their relief. I merely rise to ask if there are any gentlemen present who can relieve these symptoms of this particular form of cirrhosis?

DR. CHARLES G. STOCKTON, in reply—I should like to get a little better understanding of Dr. Preble's views in the matter of the dilatation of the hemorrhoidal veins. I think that the Doctor will agree that the hemorrhoidal veins are very greatly enlarged, as a rule, in atrophic cirrhosis of the liver; but it does not always follow that there is a development of hemorrhoidal tumors with large descending hemorrhoidal veins. I fully agree with the statement that enlargement of the hemorrhoidal veins is constant in the atrophic form of cirrhosis of the liver. The criticism of the term "gastrorrhagia" when the hemorrhage occurs in the lower part of the esophagus is well taken by Dr. Preble; it is often esophageal in origin, but not always so.

DR. FUTCHER, in reply—I had hoped there would be more discussion on the subject of pigmentation in association with cirrhosis of the liver. I attribute the lack of discussion to the fact that this disease is undoubtedly very uncommon, as shown by the fact that only four cases have been reported in this country. I should like to utter a word of warning against the possibility of these cases being mistaken for Addison's disease. In the particular case of which I read brief notes a provisional diagnosis of Addison's disease was made when he first came under observation, but the existence of an enlarged liver and spleen and the presence of hemosiderin in the cells of the sweat glands and rete malpighii.

I am glad that Dr. Herrick referred to the possibility of purpura being a cause of cirrhosis of the liver. I might say that in Anchätz's series of 24 cases evidence of a hemorrhagic diathesis was present in only 6 cases. Purpura was present in moderate degree in 3 cases; in 1 case there was epistaxis; in another hematemesis and the sixth had hematuria. It will thus be seen that purpura did not play a very important part, either primarily or secondarily, in this series.

I should like to refer to a case at present in Dr. Osler's service at the Johns Hopkins Hospital. It is a case of purpura, of seven years' standing, occurring in a man 33 years old. During this time he had almost persistent purpura and he now has a diffuse purpura eruption below the level of the waist. An interesting feature of the case is the markedly enlarged liver and spleen. Dr. Herrick's suggestion that there may be an absorption of blood pigment in such cases, with consequent enlargement of the liver and spleen, is quite apropos in this case. It is possible that this case may be an anomalous form of hemochromatosis.

In regard to the experience with the surgical treatment of ascites at the Johns Hopkins Hospital, I may say there have been six cases operated upon by Dr. Bloodgood and Dr. Mitchell with, I think, results that have justified the operation. The first case was operated on by Dr. Bloodgood four years ago. He gave a marked alcoholic history. The usual operation of stitching the omentum to the abdominal wall was performed, and the patient was cured of his ascites, which has never returned. It is four years since the operation and this man has continued taking alcohol in large quantities and whenever he reports to Dr. Bloodgood he is in an intoxicated condition.

This satisfactory result under such unfavorable conditions is very encouraging. In the second case operated upon there was but a temporary improvement. Two cases were not improved by the surgical interference. One case died twenty-four hours after the operation. There is now one case under observation in the hospital who was operated upon two or three weeks ago and up to the present time has been markedly improved. Nature had already set up an anastomosis between the omentum and the abdominal wall to which it was quite adherent. The transverse colon was also adherent to the anterior abdominal wall and in the adhesions large blood vessels were found.

A CASE OF ACROMEGALY PRESENTING CERTAIN FEATURES OF UNUSUAL INTEREST.*

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In 1886 acromegaly was first introduced to the medical world, through the report of Marie, the name having been applied by him to a disease characterized by a progressive enlargement or overgrowth of certain portions of the body, all tissue being more or less involved, and the hands, feet and face being the earlier and chief seats of the morbid change. There can be no doubt concerning the close relation of acromegaly to giantism; indeed, it may be regarded as a sort of localized giantism, due to certain limitations in the pathologic seat and process, or to the age at which the disease begins. Acromegaly is so strikingly objective in its symptomatology that one finds it difficult to explain how it could have been disregarded for so many centuries. Up to 1891 only 37 cases had been reported, yet in 1893 the number had reached 83; in 1898, 218 had been reported, and at the present time nearly 300

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cases are on record. Even this number does not rob it of its claim to rank as one of the rarest of diseases, nor has it in any way lost its interest for the clinician and pathologist.

Souza Leite, in 1890, first pointed out the fact that in nearly every case it was possible to demonstrate an enlargement of the pituitary gland. This curious gland, normally weighing but half a gram, has been found the size of a hen's egg or even larger, and by its peculiar structure suggests the possession of a double function. In its development its relation to both glandular and nervous structures is evident as its anterior portion is developed from the ectoderm of the buccal cavity, its posterior lobe from the fourth ventricle. The anterior portion is glandular in structure; the posterior contains nervous tissue and a close analogy to the thyroid gland is suggested. It is supposed to possess receptive, selective and elaborative functions. The possible connection between diseases of these two

Author's case of Acromegaly.

bodies, and hence between myxedema and acromegaly, is suggested by the fact that in myxedema the pituitary body is often enlarged, while in acromegaly the thyroid is frequently the seat of a sclerotic process.

A. Hymanson reported a case in the *Medical Record* of July 1, 1899, in which the close relationship or coincidence of these two diseases was distinctly suggested, and one of the most interesting features in the case reported below is found in the apparent combination or coincidence of the two diseases. In my patient there are also certain divergences from the type, which make the case one of peculiar interest. Exceptional opportunities have been offered for close observation, extending over a period of three years.

CASE REPORT.

The young man, Girard, is 25 years of age, has had no fixed occupation, but for some years prior to the development of the disease had spent the winter months on the ice, being employed as an ice-cutter, a point of some importance, inasmuch as the history of many of these cases has strongly suggested the influence of prolonged exposure to cold and dampness as a predisposing or exciting cause. The family history is negative. Lues venerea is denied, and there is no history of past illnesses of any importance. Three years ago he suffered from swelling of the knee-joints, which he naturally associated with his winter occupation; he also suffered from lassitude and a certain amount of general weakness, which prevented any steady work. Two years before this time, that is, five years ago, or at the age of 20, he noticed a rapid enlargement of the hands and feet, and the members of his family noticed and commented on the change in his physiognomy.

The enlargement of the hands and feet steadily continued and progressed quite rapidly up to the time that

Normal hand, same exposure and focal distance.

he presented himself in the writer's clinic, three years ago. At that time the following description of his appearance was placed upon the case record:

The hands and feet are enormous, the wrist and ankles free from inflammation but bulky, thick and in strong contrast with the forearms and legs, which in the upper four-fifths of their length are quite normal. The patient complains of langour and weakness but has had none of the severer vertical pains so common in acromegaly, nor does he complain of pain in the lumbar region or limbs. There are no signs of disturbance of the special senses nor of the nervous system. The skin throughout the larger portion of the body is nearly normal and lacks the harshness of myxedema. The appearance of the face is especially interesting; there the skin is thickened and hypertrophied, though not rough. Deep furrows have formed over the frontal region, both upper and lower eyelids are thickened and the ears appear clumsy and tumid. The superciliary ridges project, the nose is large and tumid, the nasal arch is prominent, the malar bones project markedly and the lower jaw, while not distinctly prognathic, is apparently enlarged both from the angle to the symphysis and vertically. The upper jaw is enlarged and the patient's attention has been called

to that fact by the gradual separation of certain of the teeth and by the marked forward projection of the superior dental arch. The enlargement of the upper jaw has no doubt masked the changes in the lower jaw, depriving the case of one of the so-called typical signs of the disease. Both the upper and lower lids are thickened and clumsy, the tongue is large but not excessively so, the larynx is enlarged as well, and its cartilages are apparently the seat of hypertrophy. No deformity of the spine or chest exists, nor are there any marked changes in the clavicles or the scapulæ. The fundis oculi is normal and the hands present the usual spade-like appearance with the sausage-like fingers and square, flat nails showing longitudinal striation. The radiograph demonstrates the remarkable enlargement of the bones both in length and thickness. The process seems to involve the lower fifth of the adjacent long bones, and of their overlying tissues, which present the same typical characteristics as the hands. There is no marked enlargement of the great toe, such as has been described in several instances; neither the hands nor the feet are the seat of pain, nor are their movements much restricted. A feature of especial importance, however, is the marked increase in the

Author's case of Acromegaly.

bulk of the overlaying tissues, which present the appearance and the sensation of a hard œdema exactly like that of myxœdema. Aside from the presence of dulness over the manubrium the internal organs seem to be normal. This dulness is supposed to be related to persistence of the thymus gland, a condition to which some writers would ascribe a great deal of importance and which some late investigators have shown to be present in a remarkably large proportion of these cases. The condition of the knees is simply indicative of chronic synovitis, the synovial sacs being tightly distended by the contained fluid. This description applies well to the present condition, save that the bony enlargement seems to have progressed, while the soft parts have shrunken to a marked degree.

The case seems to the writer to present several features of marked interest. It is sufficiently typical to make the diagnosis absolute; at the same time it lacks the marked prominence of the lower jaw and in certain respects strongly suggests myxedematous change. For the past five or six months the patient has suffered from cystitis due to a neglected specific, urethritis. This is slowly subsiding and it does not appear to influence the original disease in any way. The examination of the blood reveals nothing abnormal. The treatment has been solely by thyroid extract, the result being an immediate and marked amelioration of the myxedematous condition.

DIAGNOSIS OF ACROMEGALY.

Difficulties in connection with the diagnosis of acromegaly can rarely arise. The late symptoms are so striking that they offer an excellent opportunity for street-car diagnosis, and when fully developed the disease would seem to be quite unmistakable. It is customary, however, to point out the differences between acromegaly, osteitis deformans, myxedema and pul-

Author's case of Acromegaly. It will be noticed that a decided change is taking place in the great toe, though simple inspection does not reveal it.

monary osteo-arthropathy, though no one can hardly confound these diseases when they are fully developed. In the earlier stages myxedema and pulmonary osteo-arthropathy may offer some difficulty, and the following facts should be borne in mind:

Myxedema.—The hands and feet appear to be the seat of a hard edema—this symptom is present in this case—but the bones remain unchanged and the face is full and round, rather than ovoid, as in acromegaly. There is also well marked involvement of the soft tissues, falling of the hair, very often extreme tenderness over various portions of the body, and marked mental depression, apathy or irritability. In certain cases of

acromegaly, as in this, it seems certain that myxedematous change is present, and pathologic research and the fact that some patients improve for a time under thyroid would indicate that the two conditions may coexist in the same individual.

Author's case of Acromegaly.

Osteitis Deformans.—The hands and feet are here unaffected and the cranium and shafts of the large bones are chiefly involved.

Author's case of Acromegaly.

Gianlism.—This is symmetrical excessive growth and need not be confounded with acromegaly, though it is probably almost identical in etiology. Curious examples of localized enlargement affecting a single member have been noted, and in a case of acromegaly reported by Dr. Kanthack, the second toe of one of the enlarged feet was enormously hypertrophied.

Pulmonary Osteo-arthropathy.—In this disease the bones only are involved and the face is usually normal; the joints are often swollen and painful and there is usually a chronic pulmonary lesion. Moreover, the appearance of the hand is wholly unlike that presented by acromegaly, the changes being chiefly in the distal phalanges, which are clubbed and carry an elongated, curved nail.

PROGNOSIS.

These cases progress slowly, often lasting twenty to thirty years, tending to death by exhaustion, syncope or intercurrent disease.

TREATMENT.

The treatment of acromegaly has not kept pace with its pathology. Thyroid is sometimes of temporary benefit, and the pituitary body has been administered without marked effect. The conjoint administration of both remedies would seem to be indicated in my case. Marie has advocated the iodids, and others have spoken well of arsenic. Until we know more of this strange disease all treatment is at best a "forlorn hope," and our patient can hope for little aid or comfort at our hands.

NOTE: The clavicles and ribs now show marked enlargement.

THE INCREASING STERILITY OF AMERICAN WOMEN.*

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This investigation is based upon 1700 cases in private and dispensary practice in St. Louis: 1146 American-born, 357 Irish and Germans, 197 negroes. The Americans are grouped into the laboring class from dispensary practice, and the higher class from private practice; amongst these I have distinguished the native American, the American of American parentage, and the American of German and of Irish parentage; in addition, there are 2038 women taken from the genealogical records of Massachusetts.

The results obtained indicate that at the present time *20 per cent. and over of married women are childless*, whilst in the preceding centuries, in the earlier days of the country, only 2 per cent. were sterile; and when we compare these figures with the generally accepted rate of sterility, 11 per cent., found by Simpson and so generally accepted as to be called "Simpson's law," the difference is so great that it would appear that proof is needed before these facts can be accepted; it seemed impossible that sterility should have increased to such an extent in this country and that it should here be so much more common than in Europe.

To secure this proof I add the study of other records and of other of the phases of woman's functional life which are closely correlated; fecundity, intimately associated with sterility, varying in an inverse ratio, and miscarriage and divorce, which are directly parallel with childlessness.

This was necessary, too, because statistical and reliable data with regard to sterility are not numerous. Such as can be found I have here presented, mainly culled from gynecological writers; facts

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from other sources also were necessary to corroborate my results; valuable for this purpose have been the unpublished records from the dispensary of Dr. Chadwick in Boston, which he has kindly placed at my disposal, 1374 Americans, likewise grouped as Americans or American parentage and of Irish parentage, and 754 Irish. The vital statistics of Michigan, by Dr. Cressy L. Wilbur, afford valuable data as to fecundity among Americans and foreigners as in that state nationality of parents is noted. Similar data I have for Massachusetts from the unpublished manuscript of Dr. Kuczynski, elaborated from the state census, and this, in addition, presents statistics of sterility as well as fecundity. A proof more conclusive than any other one fact is the identity of my results with those deduced from the census of these two great states by the able statisticians who have presented them. The United States census gives only a very general estimate.

Definition.—It may be well to define the terms as here used, as they are not always applied in the same sense. By sterility I shall understand the condition of the woman who has been married three years without giving birth to a full-term child; by absolute sterility I hold to mean that she has never conceived; by relative sterility that she has conceived and miscarried, but has never given birth to a living full-term child;[1] abortion and miscarriage I shall use indiscriminately as indicating the expulsion of the ovum before the time of viability.

Sterility among the laboring classes in St. Louis is 21 per cent., varying in different groups 20.4 to 23.7 per cent.; in Boston 23.7 per cent., and 20 per cent. for all American born throughout the entire state, according to the Massachusetts census of 1898. My own records in private practice in St. Louis show 23.6 per cent. of native Americans barren and Americans of German parentage 26.3 per cent., an unusually high rate, which harmonizes, however, with the condition in Boston among Americans of Irish parentage, 27.2 per cent. An equally high sterility, in fact higher than among any other group, is attained by the college graduates, of whom comparatively few marry, and a large proportion of those who do marry are barren, 33.7 per cent. as reported in the investigation of 1885, and 20.5 per cent. in 1900, averaging 27.3 per cent. See Table 1.

TABLE 1.—STERILITY.

Number.	Observer.	Sterility. Natural and artificial barrenness. Class.	Nationality and Nativity.	Locality.	Total number of married women.	Per cent. of married women without children. Sterility. Absolute.	Relative.	Total.	Fecundity. No. of children to each married woman.
						Per ct.	Per ct.	Per ct.	
1		Genealogical Record, 1600 to 1850.		American Colonies.	2038			2.0	6.0
2	Engelmann	Laboring class	All American born	St. Louis	804	12.8	8.5	21.2	2.1
3	Chadwick	" "	" " "	Boston	1,374			23.72	1.77
4	Engelmann	Higher class	Americans of American parents	St. Louis	228	9.2	14.4	23.6	1.8
5	Chadwick	Laboring class	" " "	Boston	874			23.2	1.7
6	Engelmann	Higher class	Americans of German parents	St. Louis	114	17.5	8.8	26.3	1.9
7	Chadwick	Laboring class	Americans of Irish parents	Boston	334			27.2	1.9
8	"	" "	Americans of mixed parents	"	57			28.0	1.9
9	Engelmann	" "	Germans	St. Louis	188	10 3	6 5	17.0	3.5
10	"	" "	Irish	"	118	11 0	6 0	17.0	4.2
11	"	" "	All American born	"	1,146	13 2	10 6	23.7	2.0
12	Kuczynski	All classes	" " "	Massachusetts census, 1898.				20.2	2.7
13	Engelmann	Laboring class	All foreign born	St. Louis	306	10 6	6.3	17.0	4.0
14	Kuczynski	All classes	" " "	Massachusetts census, 1898.				11.2	4.5
15	Wright and Smith	College alumnæ	American born	United States	539			25.3	1.6
16	Smith	Higher class—non-college	" "	"	331			12.7	2.1
17	Sidgwick	College alumnæ	English	England	58			27.6	1.5
18	"	Higher class—non-college	"	"	87			36.0	2.4
19	Simpson and Gatton	British peerage	"	"	495			16.4	
20	" "	Villagers	"	"	675			9.6	4.5
21	Engelmann	Laboring class	Negro	St. Louis	197	14.8	9.5	24.3	1.9
22	Vogt	" "	Norwegian	Norway	351			2.5	9.6
23	de Ott	Peasant	Russia	Kaluga district	175			2.3	7.2
24	Beigel	Laborer and peasant	Alsatian	Alsatia	40,510			3.5	
25	Szukits	Laboring class	Austrian	Austria	863			7.4	4.5
26	Hannover	" "	Danes	Denmark	243			10.3	4.7
27	Turquam	All classes	French	1774				27.3	1.7
28	"	" "	"	1886				20.0	2.0
29	"	" "	"	Paris, Lyon, Rouen	5,283			27.3	1.6
30	Leudet	" "	"	Rouen	1,207			23.6	2.6
31	Mayer	" "	German	Berlin	5,195	17 2	3 2	20.4	3.5
32	"	Middle class	"	"	2,532	21.7	4.0	25.7	3.0
33	"	Laboring class	"	"	2,763	12.7	2 4	15.1	4.0
34	Leudet	Higher class	French	Rouen	134			18.7	2.0
35	"	Peasant	"	"	153			15.7	3.5
36	"	Laboring class—city	"	"	920			25.7	2.7

For the end of the eighteenth century valuable investigations as to fecundity in Massachusetts are to be found in the "Transactions of the American Academy of Arts and Sciences." Beigel, Mayer, Leudet, De Ott, Vogt, Szukits, Simpson and Mathews Duncan give important data for Germany, France, Russia, Norway, Austria and England, and Nathan Allen with regard to the New England states, Kuczynski for Massachusetts, and Wilbur for Michigan. Finally, for college women, Carroll D. Wright and Mrs. Mary Robert Smith in the United States, with Mrs. Henry Sidgwick in England, is our authority.

The facts presented corroborate my results in every detail and confirm the high sterility and low fecundity in the United States, conditions worse than in any European country save France, and for the native American population worse than that of France.

1. Properly speaking, this should include all those whose sterility is intentional, due to means of prevention; but these can never be all ascertained, not even can we determine with certainty all those who have miscarried. The result depends entirely upon the confidence of patient in physician, and the physician's skill in securing the history.

only 13.3 per cent. of foreigners; Germans 11.2, French and Irish 11.6, English 14.4 and English-Canadians 19.5 per cent., closely approximating the American, which I have likewise found in all other functional relations, whilst the French-Canadians differ greatly, with a lower sterility and higher fecundity—in other words, with a more normal and healthy functional life.

Foreign records show a great variation from the lowest sterility in Norway, 2.5 per cent., and in one of the districts near Moscow, 2.8 per cent., to 27.3 per cent. in Paris, Lyons and Rouen, in some of the departments of France only 16.8; in Alsace, whose inhabitants differ functionally as well as racially with a later puberty, sterility is very low, being only 3.5 per cent.[2]

Greater luxury and wealth invariably go hand in hand with higher sterility. Mayer of Berlin finds 25.7 per cent. among the higher and middle classes, and only 15 per cent. among the laboring classes. Sir James Y. Simpson found 16.4 per cent. among British peeresses, no observations exist; he himself believes the numbers too few to merit attention. My investigation shows that in this country this group of relatively sterile, or as they are erroneously termed by some, secondarily sterile, is over 8 per cent. of all married women; that is, 8 per cent. admit the fact; the actual number is undoubtedly larger, as some conceal the truth and others who are willing to admit have not distinguished between an early miscarriage and a free flow. In my dispensary practice the absolutely sterile are 11.6 per cent. and the relatively sterile 8.8 per cent., and this number remains about the same, whilst the number of the absolutely sterile varies far more in the different classes; among Irish and Germans the relatively sterile are only 6 and 6.5 per cent., with 11 and 10.5 per cent. for the absolutely sterile. The absolutely sterile I find to be about 12 per cent. among Americans, and this practically corresponds with the so-called "law of Simpson," that is, one sterile woman in eight and four-sevenths marriages, or 11 per cent.;

TABLE 2.—FECUNDITY AND MISCARRIAGE.

Observer.	Locality.	Class.	Number of married women.	Sterility. Per ct.	Fecundity. No. of children born to each marriage. Per ct.	No. of miscarriages to each married couple. Per ct.	Total conceptions. Per ct.	Proportion of abortions to labor at term. Per ct.	Proportion of children born to the adult marriageable from e. Per ct.
Americans.									
Engelmann, 1880-90	St. Louis	Laboring class	648	20.4	2.08	.74	2.8	2.8	2.8
" 1890-92	"	" "	804	21.5	2.1	.73	2.8	2.8	2.9
" 1880-90	"	Higher class Americans, American parents	228	23.6	1.8	.65	2.5	2.5	2.77
"	"	Higher class Americans, German parents	114	26.3	1.9	.63	2.5	2.5	3.03
Chadwick	Boston	Laboring class, American-Irish parents	334	27.2	1.9	.63	2.5	2.5	3.06
"	"	Americans, American parents	874	23.2	1.7	.64	2.38	2.38	2.7
Wilbur	Michigan, 1894	All.	Census		1.8				
"	" " 1870-94	"	"		2.1				
Wright	1885	College women	705	33.7	1.3				
Smith	1900	"	343	20.5	1.8				
"	"	Non-college women.	313	15.7	2.1				
Irish.									
Engelmann	St. Louis	Laboring class	118	17.0	4.2	.96	5.1		4.3
Chadwick	Boston		754		3.6	.77	3.8		4.1
Wilbur	Michigan	Census			5.1				
Kuczynski	Massachusetts	"		11.7	3.2				
German.									
Engelmann	St. Louis	Laboring class	188	17.0	3.5	.95	4.4		3.6
Wilbur	Michigan	Census			6.7				
Kuczynski	Massachusetts	"		11.2	3.0				
Mayer	Berlin		5,195	17.2	3.2				
English.									
Chadwick	Boston	Laboring class	113		2.6	.84	3.5		3.3
Engelmann	St. Louis	" "	51	41.0	2.5	1.13	3.7		2.1
Wilbur	Michigan	Census			4.5				
Kuczynski	Massachusetts	"		14.4	2.7				
Whitehead*	Manchester, 2000				4.34	.61	4.95		
Negro.									
Engelmann	St. Louis	Laboring class	197	24.3	1.9	.7	2.6		2.7

* These figures should be somewhat less, as they indicate the number of children and miscarriages to the childbearing women and not to all married women: the number of miscarriages seems too small; on the contrary, as I am convinced that correct answers were not given, and for these records we must rely on the veracity of the patient.

only 9.6 per cent. among a similar number of English villagers, but among English college women and alumnæ it is 27.6 per cent., as it is among their American sisters. In Austria 7.4 per cent. is given.

The number of the absolutely sterile is greater than that of the relatively sterile, that is, the number of those who have never conceived, natural or artificial causes preventing, is greater than that of those who have borne no full-term child, but admit having miscarried one or more times. This deserves attention because it is a condition never before investigated, and barely referred to even by Mathews Duncan in his well-known work on sterility and fecundity. He says that but I am convinced that he had reference to all sterile, as he makes no such distinction, and the classification has never before been made; moreover, it corresponds with the total figures for sterility which he gives—16 per cent. for the higher and 9 for the lower classes.

It is evident that the extremes of sterility are reached in this country, although the rate does not exceed, in fact, does not quite come up to that of France, which in large cities is greater, in the country less.

Miscarriage.—Few estimates exist as to the frequency of abortion, but the generally accepted proportion has been that of 1 miscarriage to 5.5 labors at term. Hegar is often quoted with his estimate of one miscarriage in the earlier months to 10 labors at term, which is about the same. I find one miscarriage to 2.8 labors at term, a little more in private practice, most among the native American, 1 to 2.77, and somewhat less, 1 to 3.03, among the American of German parentage; less still among foreigners, among the Irish only one miscarriage to 4.3 labors and among the Germans 1 to 3.6. (See Table 2.)

2. This is the average of four years, 1872 to 1875, of 40,510 families in which either father or mother have died; hence, family life was cut short and many are noted as barren who in time might have borne children; on the other hand, these are the first years of German occupation during the option of migration, of which many availed themselves and these of course were in a great measure the more mobile childless families, so that an undue proportion of families with children remained; all in all the rate of sterility may be 1 per cent. or so below the correct average.

These figures are fully corroborated by the Boston records of Dr. Chadwick, who finds one miscarriage to 2.8 labors among all American-born in his dispensary, precisely as I do in St. Louis, namely, one miscarriage to 2.7 labors among Americans of American parentage and a trifle less, 1 to 3.06, among those of Irish parentage; among the Irish in Boston he finds 1 to 4. The actual number of abortions is 0.6 to 0.7 to each American-born wife and 0.96 for the Irish, 0.95 for the German, but the number of living children for foreigners is so much greater that the proportion of miscarriage to labors is reduced to less than it is among Americans.

Other available data I could discover none, save one German investigation which from 100 miscarriages deduces a proportion of one in 3.3 labors; this is likewise indicative of greater frequency than the accepted teaching of one miscarriage to 5.5 labors.[3] Although frequency of miscarriage is evidently greater in this country, it is not possible that it should be so much more frequent than it is in Europe; I am inclined to believe that the formerly accepted standard of 5.5:1 is vague and never was based on carefully studied facts, or that it is now antiquated and that the records of the higher classes in the larger cities of Europe would show a similar condition, yet I find but meager facts pro or contra.

We have found barrenness in the large cities of France greater than it is in this country, and I believe that the same would be true of miscarriage were the investigation to be made, but no data exist as to European conditions.

Fecundity.—Among the laboring classes in St. Louis I find 2.1 children to the married couple, and I here follow the universal custom of estimating the number of children to all marriages, i. e., to the number of married women, inclusive of the sterile, not only to the number of child-bearing women or mothers.

This is the highest fecundity which is found among the American born in this country (See Table 2), and I believe it due to the large admixture of the German element; it corresponds perfectly with the results found elsewhere; in Boston it is 1.7; in the state of Michigan in the last years 1.8, and for the twenty-five years from 1870 to 1895, it is 2.1, owing to the somewhat higher fecundity in the earlier years; it has there been slowly decreasing, as it has in every state in the Union. My private practice shows a fecundity of 1.7 among Americans of American parentage, less than in the dispensary, and a better condition, 1.9, among Americans of German parentage, precisely the same as among the Americans of Irish parentage in the Boston dispensary, whilst the Americans of American parentage there show 1.74, like the native American in St. Louis, a lower fecundity than anywhere recorded, unless it be in the French metropolis and among college women, English and American.

Very instructive and indicative are the observations made in regard to the effect on the reproductive function by one of the phases of modern female life, by overpressure in schools as shown in the study of fecundity among college graduates, by Carroll D. Wright, and later by one of their number, Professor Smith; there we find the very lowest fecundity, 1.3 and 1.8 (not 1.6 as Mrs. Smith figures it)[4] children to the marriage, an average of 1.6, which is corroborated by a similar group of women who have continued their studies longer, who have taken the advanced degrees, mostly Ph. D., with 1.6 and by English college women with 1.5. With this group of college graduates Mrs. Smith compares their relatives and friends of the same social class, whom she finds more prolific, with a higher fertility of 1.89 (really 2.1), which is precisely what we should expect from that class of American women, and harmonizes perfectly with the general average shown by my tables.

These figures clearly show the influence of college work and nerve exhaustion; among no group is fertility so low as among the college alumnæ; and this is corroborated by reports from England, where we find among female college graduates only 1.53 children to the marriage, whilst the average fertility of English women, as shown by the "Victorian Yearbook," is much greater, 4.2 children to the marriage. A comparison of these figures offers food for serious thought. The Michigan census and Boston dispensary give a trifle less than my own St. Louis records, but the same that I find among the higher class from which the group of sisters or non-college women is also taken.

TABLE 3. FECUNDITY IN THE AMERICAN COLONIES AND THE UNITED STATES IN THE 17TH AND 18TH CENTURIES.

Observer.	Locality.	Date.	Number of children to the married couple.	Number of marriages.
Engelmann. . .	From genealogical records. . . .	1600–1650	6.7	146
" . .	" " " . . .	1650–1700	6.1	392
" . .	" " " . . .	1700–1750	6.6	503
" . .	" " " . . .	1750–1800	6.1	784
" . .	" " " . . .	1800–1850	4.6	213
" . .	Portsmouth	1804–1811	4.27	
" . .	Hingham	1726 1779	4.22	521
" . .	Salem	1727–1781	4.55	
Sadler. . . .	United States	1750–1780	5.22	
"	New York State	" "	5.22	
Holyoke. . . .	Hingham.	1782	4.5	Sickly year
" . . .	"	1783	4.6	Healthy year
Franklin. . . .	United States	. . . .	8.0	Vague.

These facts very fully establish the low rate of fertility of the American woman at the beginning of the twentieth century. My genealogical records show that from 1600 to 1750, each marriage produced on the average at least 6 children, which, at the beginning of the nineteenth century, was reduced to 4.5, and these figures are corroborated from Salem by Dr. Holyoke, president of Harvard, and by Dr. Wigglesworth from Hingham, by a fertility of respectively 4.3 and 4.5 children to the marriage in the latter half of the eighteenth century.

Benjamin Franklin stated that "one and all considered, each married couple in this country produced 8 children." Whilst this is based upon no positive figures, the opinion of that great statesman is worthy of record, and it is to some extent corroborated when I state that the number of children given in my genealogical tables are only those who have reached maturity, so that the total number of children born must have been greater. Then again, it is well known that in the writings of Malthus, at the end of the last century, the great fecundity of the United States was used, together with that of China, as

3. My records clearly show that all the old obstetrical standards are in need of revision. The hitherto accepted standards as to sterility and miscarriage may never have been based on extended statistical investigation, may never have been precise, and at the present day, for this country, they are certainly far from the truth.

4. The figures given by the writer are incomparable as being the number of children living, after a lapse of years. The number of children born living—the essential result—is not calculated, but proves to be 1.8.

the basis for his theories of superfecundation, and in the table he gives the United States stands at the head of the list with a fecundity of 5.2, second only to New South Wales with 5.4 children to the marriage.

Surprising as may be to us, with the figures of the present at hand, the fecundity of the American colonies of the eighteenth century, yet this is not excessive, as it is exceeded at the present day by the French-Canadian with a fecundity of 9.2 (facts based upon the study of 1000 families, kindly placed at my disposal by Dr. Pellitier, secretary of the Board of Health of the Province of Quebec, 9.3 for the rural and 9.0 for the urban population, but this is the fecundity of the child-bearing woman, not the number of children to the marriage). Then we must remember that at present in a Russian district it is 7.2, and in Norway 5.8 children to the family.

Divorce.—I mention divorce, as it is correlated with sterility and closely connected with the moral causes of childlessness. It has increased in frequency, particularly of late years, in Europe 67 per cent. from 1876 to 1886, and in the United States 72.5 per cent.

For the United States the census of 1890 shows 540 divorces to 100,000 married couples, which is approximated only in Switzerland by 195, in France 80, Germany 77, Russia in Europe 11, England 8.6 and Canada 1.6 to 100,000 marriages.

TABLE 4. DIVORCE.

Country.	Period.	Number of divorces to 100,000 marriages.	Number of marriages to one divorce.
Quoted from Official Statements by Dr. Samuel W. Dike.			
Rhode Island	1899	12,200	8.2
Vermont	"	5,555	18.0
Massachusetts	"	5,347	18.7
From State and United States Census Returns.			
Michigan	1874	306	326
"	1894	418	240
United States	1880	203	490
" "	1890	540	185
Switzerland	Mostly for 1885.	195	513
Denmark		184	543
France		80	1,250
Germany		77	1,300
Sweden-Norway		27	3,704
New South Wales		26	3,846
Russia in Europe		11	9,090
Italy		10.6	9,434
South Australia		10.4	9,615
United Kingdom		8.6	11,600
Canada		1.6	63,000

In Rhode Island for 1898, if I may rely upon so able and accurate an observer as the Rev. Samuel W. Dike, it is one in every 8.2 marriages, which would mean 12,500 divorces to the 100,000 married couples, and for Massachusetts in the same year, 1 to 18.7; startling figures when we recall that in 1880 Rhode Island, by the United States census, is recorded with 1 to 190, and Massachusetts with 1 to 566.

Throughout the state of Ohio there is one divorce to 20 marriages, and in the Western Reserve, those counties settled almost altogether from Connecticut, the conditions are much the same as in the home state, 1 to 11.8; and in Lake and Ashtabula counties, settled by New England farmers, it is respectively 1 to 7.4 and 1 to 8.5, whilst in Callio county, settled by Welchmen and Southerners, it is only 1 to 50.

I myself have made no investigation whatsoever in this direction, but present the figures of Dr. Nathan Allen, figures originally collected by Rev. Samuel W. Dike and referred to in the paper of Dr. Allen, in which he shows the deterioration of the New England family; even if we disregarded these figures, correct though they be, and accept the figures of the United States census, it is apparent how much worse conditions in the United States are than in any European country.

The census corroborates in reference to divorce the relative condition which I have shown to exist in the matter of fecundity and miscarriage between the American of American parentage and the American of foreign parentage, with an average rate of divorce throughout the country of 0.54 per cent. of all marriages; among native Americans it is highest, 0.61 per cent., less among Americans of foreign parentage 0.5 per cent., still lower among foreigners, 0.3 per cent., and highest among negroes, 0.67 per cent., precisely the relation which these groups bear to each other in sterility and in an inverse ratio in fecundity.

The causes of the excessive increase of sterility and its concomitants are both moral and physical. Figures I have none, but all the facts point in this direction; so the frequency of relative sterility, the sterility which admits of conception but terminates in miscarriage, seems to me strong proof that causes other than uterine disease prevail; so also the fact that sterility is greater as luxury and comfort increases; that fecundity is less and miscarriage more frequent.

The causes of divorce we know to be purely moral, and the fact that the relative frequency of divorce, miscarriage, sterility and fecundity among the native American, the American of foreign parentage, the foreigner and the negro are so nearly parallel, would indicate that similar causes influence each; the prevailing causes must be the same, and these must be of a moral nature.

That barrenness, in the large majority of instances, is independent of physical causes, seems to be conclusively proven by the astonishing increase of sterility in this country coincident with the progress of gynecology, and with the same giant strides which have marked the development of the very science which should control sterility were it due to disease and physical causes.

All facts here presented indicate the prevalence of moral causes; moreover, the studies of Goodell, Nathan Allen, Charles Fayette Taylor and Edward J. Ill force upon us the belief in the frequency of methods for the prevention of conception, that "too often the young wife enters the sacred bonds with the distinct understanding that she desires no offspring, and does so because of the inconvenience it would give her." As methods of prevention are common so is the resulting barrenness, moral or wilful, so are intentional abortions frequent which lead to the same result; and for this fact, too, I rely on the statements of those who have studied the subject.

A committee appointed by the American Medical Association in vain sought methods by which to stay the progress of criminal abortion, which clearly indicates that there are causes for sterility altogether too frequent that are not referable to malformation or disease of the reproductive organs.

Treatment.—However numerous may be those who willingly avoid conception, and who by early indiscretions have brought upon themselves a sterility they now deplore, there is still a certain number absolutely, or primarily, sterile who seek relief, and these are women who deserve the deepest sympathy of the man and the best skill of the physician; for not one of the many ailments of woman is so distressing as the misery of a barren, childless life

to the true womanly woman; she must never be condemned to a hopeless existence, and above all, no treatment of the woman for sterility must be inaugurated until we are thoroughly satisfied that the husband is not at fault, as proven by an examination of the semen.

Male sterility has been too much ignored, and is far more prevalent than is generally accepted. The studies of Gross have placed it as one in every six barren marriages, 16 per cent., and it has been variously estimated by those who have studied the subject from 3 to 57 per cent.

A valuable study by Brothers of New York, which has recently appeared, based upon an examination of 72 men, estimates 1 sterile man in every 5 childless marriages, but from his own figures, and in this he agrees with me, I am more inclined to place it as 1 in 4. Accepting this with the fact that impregnation is known to take place under the most adverse circumstances, as I have seen it after the removal of both ovaries; one tube totally and one in part, with but a shred of ovarian tissue remaining, as it has been found in the abdominal cavity through a slight fistulous aperture after the uterus had been removed (Koeberle); also after removal of both ovaries, with ovarian tissue from another woman transplanted upon the broad ligament (Robert J. Morris),[5] and after fixation of a bit of healthy ovarian tissue in the uterus (Palmer Dudley), it is evident that the condition must be serious which prevents impregnation.

Physical causes of sterility can not well be determined with certainty; first one, then another, has been supposed to be mainly at fault; uterine displacements have been accused; then uterine catarrh, and now we know that salpingitis is a frequent cause. Atresia, the absolute closing of the canals, gonorrhea and salpingitis I take to be the most frequent causes of sterility, and in addition, those forms of endometritis which change the secretions and render them destructive to the spermatozoa.

Treatment of physical causes only is within the province of the gynecologist, and this means a correction of the various pathological conditions which may exist; as we must always remember before inaugurating treatment to establish the potency of the husband, so we must bear in mind that frequently general conditions are at fault, such as anemia, depression, mental or physical; a change of surroundings and climate may bring relief, but whatever the cause, our efforts must never flag in behalf of these unfortunate women, as many cases are recorded where even after long years of sterility a cure has been accomplished and conception resulted.

Not only is the physician called upon to treat the absolutely and primarily sterile, but he is liable to be consulted by those who later in life relent of the nefarious practices of their early married years, and he is then confronted with the pathologic conditions produced by artificial sterility, nervous and physical, local and general, neurasthenia, prostration, impaired functional activity of circulatory and digestive apparatus, with pelvic congestion, uterine and ovarian symptoms.

These cases are tedious and trying, but it is the duty of the physician to persist, not alone for the sake of the innocent sufferer, but equally for her who, suffering from self-inflicted sterility and its sequences, has relented of her selfish life of egotism, and with the best instincts of woman aroused now longs for the joys of motherhood.

5. For this I can not vouch; it is my recollection of a most remarkable case, but the authority is not in my hands.

Whilst the moral phases of the question do not concern the physician, it is yet his duty to point out to his patient the causes of her sterility and her suffering, and the broadest field is here presented for preventive gynecology.

Two and five-tenths per cent. is probably the normal proportion of barren marriages, for this is the condition existing among the simple, healthy, hard-working people in Norway and in the interior of Russia, and a small percentage of this number is due to the male, not 25 per cent. as in civilized and infected communities; in this country nearly ten times this number of marriages are barren and women childless. This must be due, in a large measure, to methods of prevention, i. e., to artificial controllable causes. If these can be eradicated, preventive gynecology will have accomplished far more than can ever be hoped for from its most splendid therapeutic or surgical achievements.

RESUME.

This investigation is based upon numbers which, as I have emphasized, may seem small to admit of deductions as to conditions existing throughout a great country, but I feel justified in doing so, as the data are exact and cases carefully sifted. In addition, all the facts presented are corroborated in various ways; some directly by independent observers; first and foremost by the census records of two great states, namely, by the census of Michigan and that of Massachusetts; by the Boston dispensary and the records of the college alumnæ; others indirectly by correlated facts, a corresponding decrease of fecundity and increase of miscarriage and divorce. Table 5 forcibly presents the conditions with which we are now confronted in this country.

TABLE 5. MEANS AND EXTREMES OF STERILITY, FECUNDITY, MISCARRIAGE AND DIVORCE.

	Generally accepted average.	Most favorable condition now existing.	American Colonies, 18th century.	United States at the close of the 19th century.
Sterility . . . . . Per cent. of childless marriages.	11%	2.5% Norway. . . .	2%	Gen. average. 20% 23% College graduates, 25%.
Fecundity. . . . . Number of children to the marriage.	4.5:1 Europe .	7.5:1 Canadian French. 7.2:1 Kaluga department. 6.4:1 Christiania.	4.5—6:1	1.8 College graduates, 1.6.
Miscarriage . . . . . Ratio of abortion to full-term labors.	1:5.5	. . . . .	. . . . .	1:2.8
Divorce. . . . . Ratio of divorce to marriage.	. . . . .	1:63,000 Canada. 1:11,000 England.	. . . .	1:185 United States. 1:18.7 Massachusetts 1:8.2 Rhode Island.

Sterility is fully 21 per cent. among the laboring class of St. Louis, 20 per cent. throughout the state of Massachusetts, 23 per cent. among the better situated in St. Louis, the same in the city of Boston among the laboring class even; it increases with the increase of comfort and luxury, highest among college graduates, 33 per cent. (or 25 per cent. if we take the total average), higher among American born than among foreigners in this country. Especially is the difference marked in that large and hitherto entirely ignored class of relatively sterile women, those who have conceived but who never have carried a child to full term, which is from 9 to 12 per cent. among Americans and from 3 to 6 per cent. among foreigners.

Sterility has increased hand in hand with the much discussed decrease of fecundity; everywhere to some extent; in the United States it has increased to an excessive degree, just as fecundity has diminished more rapidly than in other countries. From a sterility of 2 per cent. in the eighteenth century, and a fecundity of five children to the marriage, conditions better than in any other country, and such as led to the Malthusian theory of super-fecundation, to the fear of over populating the earth's surface, after a lapse of one century, we have attained over 20 per cent., from first we have passed to last, and the other extreme is now presented—sterility greater and fecundity less than that of the women of any other nation, unless it be of France, where the question of the last decade has been one of most serious national importance.

These conditions, while not as yet menacing in any way the future of the country, as is at present the case in our sister republic, are sufficiently serious to indicate an imperative necessity for farther and more extended investigation.

LITERATURE.

1. Jour. Royal Statistical Soc., Marcus Rubin, December, 1900.
2. Benj. Franklin's Works, vol. iii. Johnson, London, 3d Ed. ii, 1806, 385-6.
3. Tr. Am. Acad. Arts and Sciences, v, 145, 2. Holyoke Stats. of Salem, i, 1785, 346. Wigglesworth Stats. Ipswich, i, 565. Wigglesworth Life Expectation, ii, 135.
4. Dr. Franklin's Works, ii, 385.
5. Brissot's Travels in the U. S. Gives birth-rate in Salem and Hingham. Quotes Holyoke, 362-364.
6. Barton: Tr. Am. Philosoph. Soc., iii, 30. Boston Acad., i, ii, 2, fecundity of U. S. (Holyoke as quoted by Brissot.)
7. Warden: Statistical, etc., Illustrations of U. S., ii, 249; iii, 231-49.
8. Seybert: Statistical Annals, Wm. Penn's Works, ii, 47-52, 705.
9. Decadence of American Families, Editorial N. Y. Med. Record, July 29, 1882, 126.
10. Nathan Allen: The New England Family, The New Englander, March, 1882. Laws of Human Increase, Quar. Jour. of Psychology, April, 1868. Population and Its Law of Increase, Western Social Science Assoc., November, 1868.
11. Mrs. Henry Sidgwick: Health Stats. of Women Students of Cambridge and Oxford, Cambridge Univ. Press, 1890.
12. Mary Roberts Smith, Ph.D.: Stats. Col. and Non-Col. Women Quar. Am. Stat. Assoc., vii, March, 1900.
12a. Carroll D. Wright: Health Stats. of Female Coll. Grads., xvi, Ann. Report Mass. Bureau of Statistics Labor, 1885, 1225.
13. A. B. Turedy: Is Education Opposed to Motherhood? Pop. Sc. Monthly, N. Y., xxxvi, 1889-90, 751-60.
14. Kehrer: Male Sterility, Centralblt. f. Gyn., No. 23, 1879.
15. Gross: Male Sterility.
16. Levi: Microscopic Exam. of Spermatozoa, Aerztl. Intelligenzblatt, 1879, 1-2. Obstr. Jrl. Great Britain, Ireland.
17. Kammerer: Tr. N. Y. Acad. Med., iii, part 7.
18. H. R. Bigelow: The Moral Significance of Sterility, Obst. Gaz. Cincin., vi, January, 1883, 1-24.
19. Steinbach: Facultative Sterilität, Internat. Klin. Rundschau, iii, Wien, 1889, 21, 82, 132, 185
20. Walker: Anthrop. Soc., London, ii, Sterility of Savage Women After Intercourse with Whites, 1865, 283.
21. Weintraub: In Syrian Women, Phil. Med. Surg. Reporter, 1888, 72.
22. Dr. Samuel W. Abbott: Vital Stats. of Mass., a 40-year Summary, 28 An. Report State Brd. Health, Mass., 711-32.
23. Arsene Dumont: Essai sur la natalité en Mass. Jrl. de la Soc. Stat: de Paris, 1897, 332-335, 385-395, 1898.
24. R. R. Kuczynski: Marriage, Fecundity and Death in Mass., manuscript. This most important investigation of Dr. Kuczynski's, which the author has kindly permitted me to see in manuscript, will appear in the Quarterly Journal of Economics for October, 1901, and January, 1902.
25. Dr. Ed. J. Ill: The Prevention of Conception, Am. Jour. Obst., xl, 1899.
26. Bozemen: Impregnation Under Difficulties, N. Y. Medical Journal, Dec. 24, 1884.
27. Courty: Gynecology, 789.
28. Winckel: Med. Chir. Rundschau, Dec., 1877, Impregnation Under Difficulties.
29. Chas. Fayette Taylor: Imperfect Hygiene of Sexual Function, Am. Jrl. Obstr., xv, 1882, 161.
30. Abram Brothers: Some Reflections Concerning Primary Sterility, Post-Graduate, February, 1901.
31. Julius Nelson: Abortion in Cattle: Report of Biological Dept. New Jersey Agricul. Coll., 1897, 251.
32. V. Turquan: Density of Population and Fertility, Jour. de la Soc. de Stat. de Paris, 1886, xlii, i, January, 1901.
33. Tallquist (Helsinfors): Recherches Stat. sur la tendance à une Moindre Fécondité, 1886.
34. Chs. Ansell: Rate of Mortality at early periods of life, age of marriage, number of children, etc. London Nat. Life Ins. Co., 1874.
35. M. T. Sadler: The Law of Population, vol. ii, London, 1830, in disproof of the super-fecundity of human beings, and developing the real principles of their increase.
36. Mann: Am. System of Gyn., i, Sterility, by A. Reeves Jackson, 441.
37. Reeves Jackson: Tr. Am. Gyn. Soc., 1879; Role of malposition of ut. as cause of sterility.
38. Noeggerath: Tr. Am. Gyn. Soc., i, 1876, 268.
39. Levy: (Munich) Aertzl. Intel. Blatt, 1879, 1-2.
40. Bigelow: Moral Significance of Sterility, Obst. Gazette, Cincin., vi, January, 1883, i.
41. Keating and Coe: Clinical Gynecology, 795.
42. Garrigues: Dis. of Women, 1894, 654.
43. Winckel: Med. Chir. Rundschau, December, 1877.
44. Kammerer: Causes of Sterility, Tr. N. Y. Acad of Med., vii, of vol. iii. (Ut. Catarrh in 342 of 408 cases sterility.)
45. Kehrer (Giessen): Beitr. z. Geburtsh. u. Gyn., 1879. Centr. f. Gyn., No. 25, ii, i, 1879, 573.
46. Beigel: Patholog. Anatomie d. Weibl. Sterilität, Braunschweig, 1878, p. 4.
47. Pearson, Karl: Chances of Death, vol. i, p. 77.
48. Dr. Cressy L. Wilbur: Vital Statistics of Michigan, 1890, 7, 8, 9.

DISCUSSION.

DR. J. M. DUFF, Pittsburg—From my experience during the past two years I feel that I am more than ever qualified to repeat what I said at Columbus, that we are fast becoming a nation of accidents. In investigating this subject I have been astonished when I come to talk with women and have accumulated evidence. The number of children who are the result of accident is enormous. It has certainly been the experience of every one in general practice to be called by a woman who will tell you that she is very sorry that this happened at this particular time because they were not ready or could not support a child. Of course, there are many fathers and mothers who are anxious to have children, and there are many more who say they are. They all believe in the sixteen-day story and as a result there are more children born conceived sixteen days after menstruation than at any other time. Fathers and mothers should be prepared physically and mentally for the production of their offspring, and there should not be accidental results. This question may appear trifling to some, but it is one of the most important and most serious questions before the American people to-day.

DR. WILLIAM H. WATHEN, Louisville—We find that the prevention of conception is common throughout this country and is not regarded, by even the most religious people, as an evil; hence, few children are born to a family. Again, it is almost universally believed by the laity that there is no moral or religious wrong committed by performing an abortion up to a certain time. When there is a desire to produce an abortion, a means will always be found to accomplish this result, and unfortunately a physician, who is in good standing in the community in which he is living, will sometimes lend himself to that purpose. It is important to impress upon the laity that an abortion at the end of the first month is just as criminal as an abortion at the end of the fifth month, because if there is ever any spirituality in the child it must be at the beginning. Induced abortion is a moral, religious and physical evil. Induced abortions are followed by diseases much more severe than if they occurred naturally.

DR. A. MCDERMID, Chicago—The field of operative obstetrics and gynecology is exceedingly attractive to all of us, but that a man should devote his time and attention to the subject in hand is beyond all praise. This work is of value not only to the profession, but to the laity and the state. I am proud of the statistics of my native country. I would ask you to take up the leading journals of the large cities of Canada and see whether you find in their advertising columns that class of advertisements which you find in the leading, respectable journals of the great cities of this country. In the matter of abortion, it occurs to me that the profession has a great work to perform in directing those who come under their care. I recall two instances of young married women who were both frantic

when they found themselves pregnant shortly after marriage. By talking to them kindly and by showing them the terrible results following abortion, I succeeded in keeping them from doing anything rash. They are now enthusiastic over the prospect of maternity.

Dr. E. D. Ferguson, Troy, N. Y.—The essayist has put this subject forth in all prominence, but he has said nothing specific as to causation and nothing as to what can be done. National investigations may go on indefinitely; we may talk of the matter here, but there is no way of getting at it except through the 100,000 medical men of this country who will carry their own individual teaching into their own parochial work. The social conditions which have arisen during the century of our existence have made possible the thing which now exists. Our forefathers were not familiar with condums and other things resorted to for that worst of all vices, marital fornication. Neither were there in those days so many instances of double epididymitis. It is not the woman who is always at fault, nor is it a fact that women have graduated from schools of learning that has made them sterile. I do not believe that for one moment. It may be the case in statistics, but it is not in fact. Very likely a double epididymitis of the consort may have been the cause. Each one of you should consider himself a mentor and give out the warning words and point out the proper thing to be done. Every one of us can recall instances in which we have been confided in that the menstrual period had stopped soon after marriage and that we should do something to bring it about. We have then the golden opportunity, but only by our own efforts can we stem the tide of vile publications that appear as advertisements in our newspapers. It must be missionary work done by the physicians of this country and carried into the homes of their families.

Dr. M. F. Porter, Fort Wayne, Ind.—I agree with Dr. Ferguson when he says that it is not because these girls have graduated from Vassar that they are sterile, but that it is in large part the result of an epididymitis. Men contaminate their wives and make them sterile because, unfortunately, instead of becoming impotent they render their wives sterile through infection of the tubes. I believe that this is largely due to the current belief that an ordinary urethral infection in a young man amounts to nothing. Take gonorrhea out of this country and you have robbed the abdominal surgeons of their vocations. We should talk about the fitness of men with a chronic gonorrhea to marry, rather than the fitness of men who have syphilis. The syphilitic men are not killing our women, nor are they increasing the number of divorces; they are not depopulating our country nor making invalids of our daughters to one-half the extent that the men are doing who are the subjects of chronic gonorrhea.

Dr. George N. Jack, Depew, N. Y.—We ought to understand this subject better than we do. As a matter of fact our courses of education are not what they should be. We see evolution being taught in our schools, and we see religion in the decline. New principles are advancing to take the place of it. All people are sustained by a selfish purpose. It is my custom when patients come to me and tell me their troubles, to try and convince them that it is to their own selfish interest to bring forth children. I advance an argument, after which very few of them apply to me for assistance a second time. The matter is not so difficult of control if physicians will take the time and trouble to talk quietly and convincingly to their patients.

Dr. Hannah M. Graham, Indianapolis—The abuse of the physiological law of creation, as his statistics have well shown, weakens morality, murders the unborn, and makes physical wrecks of its followers. I recognize the fact that I am not a voter, but I speak to a body of men, each of whom enjoy the privilege of stamping the law with their individual approval or disapproval, and the question of who shall and who shall not marry has been discussed in our land until you are all familiar with the various objections given.

Dr. M. K. McCoy, Duluth, Minn.—I am very glad that the fault has not all been cast upon the women. However, the women of America have no encouragement to become mothers. What protection has she or her children? Confronting gonorrhea, the saloon on one side, the brothel on the other, and back of it all the abortionist, it is a wonder that any children are born. It is time that the protection of the family and the woman should be considered. The college graduates should not be held responsible for the decreasing family. In many instances these women also have dependent mothers, brothers and sisters, and they can not take upon themselves married life with its accompanying duties.

Dr. Engiemann, in reply—It has been correctly stated that nothing was said in regard to the cause of these conditions. Neither did I say anything of the treatment; this was for want of time. The idea has been correctly expressed, as I myself put it, that the treatment is in the hands of every one of us; it is the influence the physician exerts, or should exert, in the home. I have endeavored to show that the causes of sterility and childlessness are moral causes. By far the largest percentage is statistically proven to be due to moral causes. Some few physical causes exist, such as atresia, endometritis, especially that due to a germ of some kind. However, they are not many. That endometritis is the cause of absolute sterility is shown by the breeder; abortion in animals occurs in some 12 per cent. of all cases; 5 per cent. in well-kept herds, but sometimes epidemics of abortion occur of such violence that the breeders speak of an abortion germ which is very likely nothing more than a streptococcus. It is an endometritis which leads to abortion in animals and at all the experiment stations antisepsis is now being practiced. They are guarding against abortion by antiseptic precautions. Inflammation of the mucous membranes is a common cause of sterility in the human being.

It has been rightly said that the male is at fault in a great many cases, but to arrive at a fair estimate of barrenness I believe that we may accept as a normal status in a healthy people the showing made in Russia and Norway where artificial means do not cause sterility, and there is childlessness in only 2 or 3 per cent., of which probably 5 per cent. is due to the male. That sterility of the male is far more common than is generally accepted has been shown in a very admirable manner by Dr. Brothers, of New York; it is so frequent that I must emphasize this precaution. Before treating the woman who comes to you because of sterility, examine carefully the male. It has also been rightly said that if the proper care were taken and an honest course pursued, there would be very little gynecology. The proper advising and guiding of these mothers in health will do more to help women than all gynecology and surgery. Sterility has gone from worse to worse in the face of gynecologic progress. To this astonishing fact I neglected to call your attention, and you may well ponder on the increase of sterility in the face of progress and development of gynecology, showing that sterility has practically nothing to do with physical causes. There are few physical causes; the main causes are moral; therefore, the treatment does not fall strictly within the sphere of the gynecologist. You may rightly ask why I bring this matter before this Section; it is because I do not know where to place it, and in a measure it is gynecological because it deals with pathological conditions of women.

Conception takes place so easily and under the most adverse circumstances that the physical causes which prevent conception must be serious indeed. Women will conceive when there is only a bit of ovarian tissue left, even when the uterus is removed, as in the case of Koeberle; impregnation took place and the ovum developed in the abdomen.

The interesting remarks of Dr. Duff are in the line which must be followed. He clearly pointed out the efforts made to prevent conception with that sixteen-day story, and it would be well to bring prominently before the profession the fact he imparts, i. e., that the mass of children are conceived after that time—after the sixteen days from the cessation of the menses. It is true that the majority of conceptions are mistakes. This is an important subject, for the lack of fertility has invariably been the precursor of national decline.

THE MORTALITY OF APPENDICITIS.*

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During the year 1900 there were operated upon at the German Hospital, Philadelphia, 268 cases of appendicitis, of which number 144 were acute attacks of the disease and 124 were chronic. Of those operated upon during the acute stage of the disease, 26, or 17.8 per cent., died, either from the disease or from some intercurrent trouble arising during the illness, or existing prior to the time of operation. One of the patients who had diabetes mellitus, and in whom the existing abscess was simply drained under local anesthesia, died of diabetic coma three days after operation. Another case had advanced phthisis at the time of the operation and died of peritonitis. Still another case developed a post-operative pneumonia, from which he died on the second day following operation. If we deduct these three cases, the mortality of this series of cases is 15.9 per cent. for acute appendicitis without intercurrent disease.

In the 26 fatal cases the following conditions were noted:

Seven cases had general purulent peritonitis at the time of operation. In 7 others a general purulent peritonitis occurred subsequent to operation; in 8 cases septicemia was the cause of death; 1 case died of shock, and 1 died of shock following a second operation for the relief of an intestinal obstruction due to bands of adhesions. The remaining 2 were the cases of phthisis and diabetes referred to above.

In the 7 cases of post-operative peritonitis the appendix was removed in every instance. In 3 of the cases the appendix was post-cecal, and, by its removal, an unsuspected collection of pus was discovered. In 1 other the appendix occupied the center of a collection of pus and was complicated by a gangrenous cecum. In another the appendix was behind and to the outer side of the cecum, and lay in a mass of infected exudate, and there was also an abscess in the muscular layers of the abdominal walls. In the sixth case an abscess was encountered immediately on opening the abdomen, the contents of which escaped, both externally and into the general peritoneal cavity, before anything could be done to arrest it. In the seventh case the appendix lay to the cecal side of the abscess wall and was not a portion of it. This was the phthisical case, and death was due to septic peritonitis.

The time which had elapsed between the onset of attack and the time of operation was as follows: In 7 cases with purulent peritonitis at time of operation, in Case 1, it was less than 12 hours; in Case 7, 20 hours; in Case 18, 24 hours; in Case 15, 2½ days; in Case 5, 3 days, in Case 9, 10 days; in Case 16, 21 days.

In 7 cases of post-operative peritonitis it appeared as follows: Case 21, 24 hours; Case 13, 5 days; Case 20, 7 days; Case 25, 8 days; Case 8, 14 days; Case 27, 50 days; Case 10, not noted.

In 8 cases of septicemia it was as follows: Case 12, 2 days; Case 2, 2 days; Case 9, 7 days; Case 23, 10 days; Case 19, 10 days; Case 4, 14 days; Case 3, 17 days, and Case 22, 49 days.

Shock was observed in Case 17. There was no history, but there was found an intraligamentary cyst, cystic ovaries and numerous inflammatory cysts. Intestinal obstruction occurred in Case 24 in 24 hours.

As regards the number of attacks, they were as follows: It was the first attack in 13 cases; the second attack in 5 cases; fourth in 2 cases; sixth in 1 case, and it was not noted in 6 cases.

The character and severity of the attack was shown, with classical symptoms, to be severe in 20 cases, and with classical symptoms, to be mild in 6. It was not noted in 1.

The position of the appendix and its relation to other organs was as follows: Post-cecal, in 12 cases; in or toward pelvis, 12; toward spleen, 1; not noted in 1, and not looked for in 1.

The complicating diseases were: Diabetes, 1 case; phthisis, 1; pneumonia, 1; ovarian cyst, 1, and intraligamentary cyst, 1. Nearly every case showed evidence of nephritis after operation, except the case operated under local anesthesia.

The extent of the inflammatory process in appendix was as follows: Intense inflammation in 7 cases; gangrenous in 10; perforation in 3; gangrene and perforation in 5; chronic inflammation in 1, and not sought for in 1.

Secondary collections of pus were encountered in 11 cases; 7 in the pelvis, 3 post-cecal, 1 to the median-line side of right iliac fossa, and 1 in the abdominal walls.

Gangrene of the cecum and colon was encountered in 7 cases. In 5 it existed at the time of operation, and in 2 cases it developed subsequently. It is probable, however, that the damage to the bowel had occurred before the abdomen was opened.

The one death in chronic appendicitis was in a case where an ovarian cyst, which was adherent to the appendix, complicated the appendiceal operation. In addition to the ovarian cyst there were numerous inflammatory cysts. The patient did well until the third day, when the drainage tube was removed, after which she promptly developed a septic peritonitis and died on the sixth day following the operation. Whether the sepsis was introduced from without at this time or whether a latent sepsis in the peritoneal cavity was liberated by the manipulation is a matter of surmise. Yet it is the opinion of the authors that this was a case of post-operative infection.

The fatal cases of appendicitis that I have reported do not by any means cover the subject of the mortality of appendicitis. In consequence of this I will digress a little from these cases for a short discussion of the

MORTALITY IN GENERAL.

In the cases not subjected to surgical treatment, by far the largest factor is septic peritonitis. This arises in one of several ways: 1, transmigration of micro-organisms from an ulcerative or interstitial appendicitis, without rupture of the appendix; 2, gangrenous appendicitis or rupture of the appendix by ulceration, without peritoneal adhesions localizing the septic area, and 3, internal rupture of a peri-appendiceal abscess.

Another quite common termination is an obstruction of the bowel, either by adhesions of the appendix to neighboring small intestines, or by the bands of adhesions thrown out in nature's efforts to localize a septic area.

The factors mentioned above are responsible for by far the greater number of deaths in non-operative cases of appendicitis. Yet there are other complications that are seen quite frequently, for instance, the deposit of septic material in distant parts of the body, as the liver, lungs, brain, heart, etc.

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Rarely an abscess rupturing into the bladder will causes a fatal cystitis or pyelitis. In regard to the number of attacks, it is to be remembered that the fatal attack may be the solitary severe one, and during it the proper diagnosis is made for the first time. Severe attacks without fatal issue subside to varying degrees, but commonly render the internal symptoms more aggravated.

As we are firm believers in the operative treatment of this affection, our main interest is in the causes of a fatal termination in those cases submitted to surgical treatment. In cases of chronic appendicitis without adhesions, or in acute cases operated during the attack in which the lesions do not spread beyond the peritoneal coat of the appendix, the mortality is confined entirely to those causes that are inseparable from any celiotomy. Septic peritonitis due to errors of aseptic technique, hemorrhage from the slipping of ligatures, nephritis and pneumonia coming on during convalescence, and the unavoidable dangers of anesthesia.

In those cases complicated with adhesions, but without septic infections, the mortality is also very low, yet there are certain operative factors that greatly increase the mortality in these cases over the class just described. The necessity of a large incision, greater liability to hemorrhage from the adhesions, and the danger of tearing the peritoneal coat from the bowel in freeing adhesions, which latter accident is very likely to result in a fatal necrosis of the bowel, all add to the gravity of the operation. In addition, in a certain proportion of these cases, gauze must be packed into the bed of the appendix to control hemorrhage not accessible to ligature, thus adding to the case the dangers connected with gauze drainage. The principal dangers are, infection from without carried to the peritoneal cavity along the gauze, and obstruction of the bowels, either by the disposition of the gauze, or by the adhesions necessarily remaining after its removal.

In the series of cases reported, there is one death belonging to this class of cases. This case was complicated with an ovarian cyst and has been discussed above.

The two classes of cases described above comprise those in which the operation of election was done, and in which the mortality is very low. Of these cases, 124 were operated upon at the German Hospital in 1900, with only one death, or 8 per cent. Contrasting this record with those operated upon in the presence of pus or gangrene, of which there were 144, with 26 deaths, the grounds for my belief in the early operation are clearly seen.

There is one class of cases of appendicitis, however, in which, in the great majority, a lethal termination is reached in spite of any plan of treatment. These cases can be appropriately called fulminating. Several of the fatal cases reported illustrate this type. In them, operation even in the first hours, is too often unavailing, as the first symptoms are those of general purulent peritonitis. In one case of this series, I operated twelve hours after the onset of the attack and found an advanced general purulent peritonitis, a condition from which I have never seen a recovery.

Many cases are reported in the literature as recoveries from general purulent peritonitis, but from my experience I am led to think that there was probably some error in the diagnosis, and that the cases were probably a very extensive, but nevertheless localized peritonitis. In cases in which the first attack is of this type, it is hard to see how a fatal termination can be avoided, but if there have been other attacks previous to the fulminating one, some one is responsible.

In cases of appendicitis with localized collections of pus, the success of the operation to a great measure depends on our success in emptying and thoroughly draining every pocket of pus. Merely opening and draining the main abscess will not do, for there are frequently secondary collections of pus in the pelvis, or among the small bowels, which, if left unevacuated, will render our operation unavailing. The great problem in this operation is how to drain all these collections without infecting the general peritoneal cavity. Irrigation is a frequent cause of this and should only be used with the greatest caution.

Of the four main localities of appendiceal abscesses, that situated to the outside of the cecum gives, perhaps, the most favorable prognosis, as we can keep to the outer side of the general peritoneal cavity, and, by a counter opening in the loin space, secure free drainage. The next most favorable variety is that situated anterior to the cecum and directly under the abdominal wall. Next in order comes collections of pus in the pelvis, and then, most dangerous of all, local collections, one to the median line side whose walls are made up principally by small intestines. Post-cecal collection of pus offer a serious problem to the operator, for it is in this locality that we have post-peritoneal infection and necrosis of the bowel. If the pus be not localized, but free in the peritoneal cavity, there is no hope of recovery, unless perhaps by operation in the first hour or two, when only the serum is infected and peritonitis has not actually begun. The reason for the varying degrees of danger in the different varieties of appendiceal abscesses, lies in their adaptability to evacuation without contamination of the general peritoneal cavity.

The advisability of removing the appendix in the presence of pus has been the subject of much discussion. In the opinion of the author the appendix should be removed except under very exceptional circumstances, for by so doing we render less likely the following possibilities, which are active factors in appendiceal mortality: Fecal fistula; an undiscovered secondary collection of pus; subsequent attacks of the disease, and the danger of subsequent necrosis and obstruction of the bowel. With these objects to be attained and with the surety of freedom from spread of infection by the use of a proper technique, it seems advisable to remove the organ. There are, however, a few cases in which from the depressed condition of the patient we must be content with draining the abscess, leaving the removal of the appendix to a subsequent operation.

Another very common cause of death in these cases is necrosis of the bowel, probably due to septic emboli in the veins of the mesentery, or pressure from the plastic exudates. Metastatic abscesses, septic endocarditis and obstruction of the bowel also account for the death of some of these cases.

Ether for some unexplained reason is especially badly borne by these patients and adds greatly to the anxiety of the operator.

In the 118 cases operated upon during the acute stage of the disease and followed by recovery, it is interesting to note the following facts: In 61 cases pus was present. Of this number, the appendix was perforated and gangrenous in 21 cases; 2 cases had perforation without gangrene; in 25 cases infection occurred by migration of micro-organisms through the walls of the appendix, and in 13 cases the records fail to show the con-

dition of the appendix. In the remaining 57 cases, the inflammation was confined to the appendix. In 6 cases there occurred fecal fistulæ, 4 of which closed spontaneously, 2 requiring a subsequent operation. There were 56 cases operated upon in the first attack, and in the remaining 62 cases there was an average of 4 attacks.

During the year there were in the hospital 11 cases of acute appendicitis that were not operated upon, 3 of these died. Of the remaining 8, who refused operation, 5 left with a mass in the right iliac fossa, and in 3 the lesions were apparently confined to the appendix.

One thing seems certain, one attack predisposes to other attacks, and, barring the rare cases of obliterating appendicitis, each attack renders the operation more difficult on account of adhesions, their multiplication and tendency to denseness and contraction, thus detracting from a favorable prognosis. It is very common, however, to elicit by careful questioning a history of attacks of abdominal pain, which at the time of their occurrence were ascribed to other causes, e. g., bellyache, cholera morbus, "bilious attacks," typhoid fever, cholecystitis, nephritic colic, neuralgia of the stomach or bowel, or to entero-colitis, hepatic colic, etc. In giving a prognosis the possibilities of these being appendiceal in origin must be taken into consideration.

The character and severity of attacks is of great moment and must be duly considered in the question of appendiceal mortality. Certain cases begin with an attack, which, from its incipiency, is of the greatest severity, both as to symptoms and pathologic changes as well. These cases are known as the fulminating variety, and the destructive changes in the appendix take place in a few hours. I have operated within twelve hours after the onset of the first attack and have found a gangrenous and perforated appendix, with abscess and gangrene of the cecum, as shown by Case 1.

In another patient, Case 21, operated upon within twenty-four hours after the onset of the sixth attack, we found the appendix gangrenous, perforated and bound up in a mass of dense adhesions which involved the cecum, small intestine and parietal peritoneum. This patient died of general purulent peritonitis sixty hours after operation.

In still another, Case 7, which was operated upon twenty hours after the onset, we found a gangrenous, perforated appendix with forming adhesions and general purulent peritonitis. Here nature was attempting to protect the peritoneum, but was too slow to encompass the ravages of the diseased process in the appendix.

I might go on and report many cases of this frightfully-rapid type of the disease, where even the earliest operative procedure may be of little avail. Where this has occurred in the first recognized attack, it is difficult to see how matters can be mended, but where it arises in an attack after the original one, some one is at fault, for many such deaths could have been prevented by operation at an expedient time.

In most fatal cases which can not be classed as fulminating, the attacks are of varying severity, although many of them are severe and progressive. However, one must be on the watch for those cases, mild as far as symptoms indicate, but in which, nevertheless, the pathologic changes are progressively destructive. Such a case was found in A. H., who was operated on in the second week of her first attack. The appendix was gangrenous, and, together with the cecum and small intestine, formed the abscess cavity wall. In this case the pelvis was full of pus, and she died of septic peritonitis.

It has been my experience that recurrent attacks of appendicitis are generally progressive in severity, each one adding fuel to the flame. Adhesions grow more numerous and dense. The blood supply of the adherent organs becomes altered. Post-operative necrosis is rendered more probable, and the stripping off of the peritoneal coat of the cecum or bowel is aided, thus favoring post-operative necrosis of the intestine.

POSITION OF APPENDIX.

Its position and relation to other intra-abdominal organs, as illustrated in this series of cases, is as follows: In 12 cases the appendix was found behind the cecum; in 12 others it occupied a position pointing toward the pelvis; in 1 toward the spleen; in 1 the position was not noted, and in the other the organ was not looked for. This series would seem to point to an equal division of severity so far as the position goes, but nevertheless an appendix pointing toward the pelvis is rather more favorably located than one behind the cecum.

The position of the appendix is of the utmost importance in a conideration of the subject before us. An appendix which occupies a position behind the cecum, pointing upward toward the liver, is a favorable locality for fatal attacks of appendicitis. An acute inflammation of an appendix in this position favors post-peritoneal infection, either by the route of the lymphatic or venous circulation. Collections of pus dissect up the posterior layer of the peritoneum; by the burrowing pus, the blood supply of the cecum is interfered with, and necrosis of the gut is apt to follow. This location of a septic collection favors abscess of the liver, a condition, however, which is rarely met with as a complication of appendicitis. Then, too, in this class of cases septicemia plays an important rôle.

The appendix, holding a position in the pelvis or in the direction of the pelvis, offers a slightly better prognosis than when it is behind the cecum. This is, however, far from being a favorable locality; for in a fair percentage of the fatal cases the appendix occupies this position and the pelvis contains a large amount of pus.

In the female, a collection of pus in the pelvis is not only unfavorable to the life of the patient, but the disastrous effects upon the uterine adnexa are marked even in those cases which recover, and such patients are condemned to lives of invalidism. Pyosalpinx, uterine and bladder adhesion, and adhesions between the uterus and sigmoid or rectum, are common events in this class of cases.

In the male a sloughing of the pelvic fascia is not uncommonly met with, and is a condition of great seriousness, not only as to life, but also as to the health of the patient who does not succumb in the acute stage of the disease.

In connection with the subject of the locality of the appendix, a point which has been very forcibly brought to my notice is the frequency with which collections of pus have been found in the pelvis. I make it a routine practice to pass a glass drainage tube into the pelvis in every acute case of appendicitis, and have with astonishing frequency discovered pus.

When the appendix points toward the spleen, general peritonitis is of common occurrence, and this position must therefore be considered a dangerous one. It is with this direction of the appendix that secondary abscesses occupying an area to the median line side of the

right iliac fossa so commonly occur and are frequently overlooked. Other positions, such as in the ileo-cecal, ileo-colic or sub-cecal fossa, are associated with destructive phenomena.

DISEASES COMPLICATING.

Diabetes as an associated trouble enters into the consideration of our subject, for recently I had a case of an acute attack where the abscess was opened under local anesthesia, but the patient succumbed to diabetic coma.

Nephritis is far more common, and its relationship and true value as a factor is not as entirely established as one would wish or could expect. Nearly all my cases, both the fatal ones and those which recover, show albumin and hyaline and granular casts after operation. Is this due to the ether? In those which recover, the symptoms of the nephritis gradually subside without any evidence of permanent injury to the kidneys. It does seem probable, however, that, other things duly considered, in the fatal cases the nephritic condition must play an important part in lowering the patient's resistance by the retention of constitutional poisons and the alteration of the blood pressure.

A septic condition of the heart and its membranes is a serious complication and is invariably fatal. Endocarditis is not uncommon, and although the fatal issue may be deferred, it is none the less sure. The same can be said of myocarditis and pericarditis.

Septic pneumonias are common, but not necessarily fatal, as a fair percentage of these cases do get well. It is, however, a serious matter, and may determine the end.

Appendicitis in a phthisical patient offers a problem which is difficult of solution. I operate on them when pus is present, but only as a last resource, and then do as little surgery as will meet the indications.

Infection of the appendix by the typhoid bacillus is far more common than is usually accepted by our medical brothers. The active stage of the enteric fever does not, *per se*, offer a contra-indication to operation in the presence of acute suppurative appendiceal disease. I have on several occasions operated under these circumstances with a happy result.

TIME BETWEEN ONSET AND OPERATION.

This brings up the often-debated point as to the time for operation, and I would like to state here, with all the emphasis at my command, that delay in operation is responsible for more deaths in appendicitis than are all the other factors which have to do with the disease. Barring some cases of the fulminating variety, where nothing that man can do avails, there are no cases which, if operated upon within the early hours (preferably the first 12 hours, and at the latest 18 to 24 hours), that can not be saved, not only to live useful lives, but to live them minus fecal fistulæ, tugging adhesions, danger of intestinal obstruction, and chronic or subchronic invalidism. Also allow me to emphasize the ever-increasing difficulties of operation with a directly corresponding decrease of a favorable prognosis, which attends each succeeding attack of appendicitis. I am sure that those of you who are constantly seeing and meeting this disease in its various phases will agree that early operation stands without a peer as the method of choice.

EXTENT OF INFLAMMATION.

The various degrees of inflammation are all attended with a mortality; the acute catarrhal being the lowest in the scale. Interstitial appendicitis is very commonly attended with peri-appendicular infection from migration of organisms through the diseased walls, and has a higher percentage of mortality than the catarrhal. Gangrenous and perforative conditions, which can be properly classed together, are attended with the largest death rate of all varieties of appendicitis. There we have a direct outpouring of the highly septic contents of the organ into the surrounding tissues, which, from the inflammatory process set up by nature to protect it against the coming invasion, has become a fertile soil for the growth of the infecting organisms.

The location of the perforation and the relation it bears to surrounding tissues and organs is a very important point. An appendix pointing into the pelvis which perforates at its tip will offer a better chance for localization of the subsequent abscess to the pelvis and insure a better prognosis than if the perforation takes place at or near the proximal end, for here the chances of general peritoneal infection are increased.

An appendix situated behind the cecum, pointing toward the liver, will be followed by serious results, no matter where the perforation occurs, although a perforation at the distal end will increase the danger on account of the proximity of the liver and kidney. A perforation at the base of an appendix located behind the cecum, and particularly if it be on the posterior wall, will favor retroperitoneal infection.

It may be laid down as an axiom that the danger of death in acute appendicitis increases in direct ratio to the area of peritoneum involved in the septic process.

When the process is limited to the right iliac fossa, the lowest percentage of mortality is accomplished with the spread of the septic process to the pelvis, and thence becoming diffused, we have an ever-increasing fatality until we arrive at the infection of the general peritoneum, when the apex of the scale of mortality is reached. I can say truthfully that I have never seen a patient recover in which the general peritoneal cavity was infected throughout its entirety.

With all due deference to my professional brethren who report cures of general septic peritonitis, I must nevertheless say that their cases were extensive, no doubt, but just as surely were they cases of localized infection in which there remained some healthy, uninfected peritoneum.

ANESTHESIA.

This plays but a minor part in the mortality of the cases upon which this paper is based. Ether is used almost invariably and we have had but few accidents, and rarely a death which could be ascribed to the anesthetic. We have used spinal cocainization, but do not see that it offers any advantages or decreased risks over ether narcosis and it has certain decided objections. It does not secure muscular relaxation and therefore interferes with the operator and increases the risk of infection by the forcing of a knuckle of gut into the area of infection.

Occasionally a patient will inspire mucus, calling for tracheotomy, and this may be followed by an inspiration pneumonia. These accidents are to be laid to the condition of the patient rather than to the anesthetic. A patient with a septic condition in his abdomen will frequently take ether very badly and have respiratory failure or clogging of the trachea and larynx with mucus.

DIFFICULT CONDITIONS.

The position of the appendix, as has been said, in its relationship to contiguous organs, influences the

difficulties of operation and the prognosis. It is far more difficult to remove an appendix which forms part of the wall of the abscess cavity or infected area, or one which is behind the cecum, than one which springs into view as soon as the peritoneum is opened, and undoubtedly the removal of an appendix under such circumstances increases the risk unless it is performed by one whose technique is highly developed, and who fully realizes the dangers to the patient. I believe, and to my own satisfaction have demonstrated, that the removal of the appendix, except in rare instances, will give the lowest percentage of mortality.

Adhesions always mean increased operative difficulties and both directly and indirectly are responsible for appendiceal mortality. Directly, by the danger of disseminating infection, by the concealment of secondary collections of pus, and by hemorrhage; and indirectly, by intestinal obstruction, by stripping off of the serous coat of the bowel and subsequent necrosis, and by tearing the mesentery with the same result. And yet adhesions are of use to those unfortunates who are denied, by their own or their physician's prejudices, the benefits of early operation. The post-operative pains of patients who have had abdominal adhesions are so common that one dreads to meet with them at the time of operation. The pain is due to tugging and pressure on the adherent organs.

Perforation of the appendix is not necessarily a fatal accident, yet it is of common occurrence in fatal cases. As has been said, the danger of perforation lies in the locality of the perforation and its relation to the position of the appendix. When perforation occurs in the early hours of an attack, before the confining wall of lymph has become sufficiently organized to protect the peritoneum, the danger of a fatal peritonitis is increased. Perforation is always indicative of an extensive pathologic change, those leading to the rupture and those which follow as a result of the free outflow of infectious material. What has been said of the perforative type is to a great extent true of the gangrenous, for the two are usually found to co-exist. It is in these two varieties that the secondary septic complications arise that are responsible for so many deaths.

There are the following five varieties of appendiceal abscess dependent upon the location of the collection:

1. This is the most common in my experience, and is the one in which the collection is located post-cecal, or between the layers of the ascending meso-colon. This variety is attended by a high rate of mortality. Here it is that we find post-peritoneal infection, lymphadenitis, phlebitis and pyelo-phlebitis. I have come to dread the consequences of this last variety of abscess on account of the tendency to gangrene of the cecum and colon, as a result of the disturbance of the circulation of the bowel by the dissecting process of the pus, to pressure necrosis and to septic thrombosis of the mesenteric arteries. This has occurred in a large percentage of my fatal cases of post-cecal abscess. The gangrenous condition of the bowel may occur prior to and subsequent to the time of operation, coming on as late as two or four days after operation; and when it does occur is apt to be rapidly fatal.

2. This variety is that in which the collection is immediately beneath the parietal peritoneum, being confined by the cecum, coils of small intestine, the omentum, the appendix, parietal peritoneum and masses of inflammatory lymph. In this variety the mortality is much lower than in the previous one, for the general peritoneum and lymph channels are shut off from infection. It is here that the question of the removal of the appendix comes up. Every case must be judged by itself, and a procedure decided upon which will best suit the case in point. However, in the vast majority of these cases the appendix can be and should be removed. Simply draining the abscess will allow your patient to recover from that particular attack, but does not offer a cure of the disease, for the likelihood of recurrence is not removed, and with each subsequent return the difficulties of operation and the dangers of an unsuccessful termination are distinctly increased.

In the cases of several of my patients who died of peritonitis subsequent to removal of the appendix, under the above-mentioned circumstances, the infection may have occurred as a result of this procedure. Nevertheless, more cases will get permanently well by removal of the appendix than would do so by allowing the gangrenous and perforated mass to remain.

3. In this variety the collection occupies the pelvis, and it is very common. It is, however, frequently unsuspected and undiscovered. Of all the varieties of appendiceal abscess, this is the most favorable for recovery, although it is frequently attended by involvement of the pelvic organs, especially in the female. The favorable prognosis of this variety is due to the isolation of the pus, owing to the dependent position of the pelvic collection.

4. This variety in which the collection is located near the median line of the abdomen and to the median line of the cecum renders a fatal issue exceedingly likely. It is this variety that is most apt to be associated with secondary collections. The difficulty of treating such an abscess, without infecting the general peritoneum, is extreme and frequently impossible.

5. Here the collection is free in the general peritoneal cavity, and in this variety the cases are practically all fatal unless operated upon very early.

CASE. 1.—W. C., aged 21 years, single; American; machinist. Admitted July 4, 1900.

Not feeling well for two days before admission. Complained of diarrhea and slight pain in abdomen. Twelve hours before admission was taken suddenly ill with severe pains in abdomen, vomiting several times. On admission abdomen distended, tympanitic and exquisitely tender. No movement of bowels or passage of flatus for 12 hours. Pulse wiry, rapid.

Operation immediately after admission; incision about four inches long, through right rectus muscle; as soon as the peritoneum was opened a large quantity of cloudy, brownish fluid escaped; intestines were red, injected, lusterless, and covered in places with a grayish-white exudate, as was cecum around the attachment of appendix. Appendix was ligated and cut off. Pelvis was drained with a glass tube, and one piece of iodoform gauze. Incision closed with silkworm-gut sutures.

Died 36 hours after operation, with symptoms of general peritonitis.

Urine after operation was scanty, albuminous and contained hyaline and granular casts.

This case belongs to the fulminating class in which operation must be performed in the first hours of the attack if the life is to be saved, for although the patient was operated upon within 12 hours from the beginning of the attack, the pathologic conditions found at operation would make recovery very exceptional.

CASE 2.—W. C., aged 32 years; married; American; machinist. Admitted to German Hospital Nov. 1, 1900, and the following history was obtained:

His father died of old age; mother living and well; 1 brother died of an accident, and 1 sister died in infancy; 3 brothers

are living and well. Has used tobacco and malt liquors habitually. Denies venereal diseases. He had measles in childhood, but has been in good health since then. He had a slight attack of abdominal pain two weeks ago, but no other history of appendicitis. His present condition began two days ago. The onset was sudden, with pain in right side of abdomen and tenderness. Bowels were regular before attack; during attack he took castor oil, from which he had two or three bowel movements. The pain was cramp-like, and became steadily worse hour by hour. He had no digestive disturbances; there was rigidity of the right rectus muscle, but no distension.

Operation one hour after admission. Ether was used, which he took badly, becoming markedly cyanosed, with dilated pupils and rapid pulse, while his abdominal walls were not relaxed. An incision five inches long was made through the right rectus muscle. The omentum was red, inflamed and adherent to the intestines. The appendix and bowel around it were densely adherent; appendix was behind the cecum, gangrenous and adherent, and surrounded by a collection of pus. Appendix was freed and removed and cavity drained. Wound partly closed with through-and-through sutures of silkworm gut.

Nov. 4, 1900. Abdomen is flat; passes flatus; stomach retentive; is extremely restless and can not sleep. Has an anxious expression; cold, clammy hands; leaky skin; rapid weak pulse. He is mentally clear. Died at 8 p. m.

Partial postmortem through incision showed partially gangrenous condition of colon, and cecum with a plastic peritonitis; right-sided chronic pleurisy; a severe parenchymatous nephritis.

In this case, as in the previous one, earlier operation was almost essential to a favorable outcome. From the conditions found, there must have been previous attacks, as the adhesions were too dense to have formed entirely in two days. Another of the disadvantages of late operation was here shown, in the large amount of ether he required and a subsequent ether nephritis.

Death was directly due to a septic absorption from a gangrenous bowel, caused either by pressure of exudate, or more likely septic thrombus in the mesenteric vessels. This is probably a commoner cause of death in cases like this than is general septic peritonitis.

CASE 3.—H. L., aged 45 years; married; Irish. Was admitted to German Hospital, Jan. 12, 1900, with the following history:

Parents died of old age; does not remember having any of the diseases of childhood; was never sick until present time; smokes moderately; denies venereal disease.

Was first taken sick on Christmas day, 1899, with pain in the right iliac region. The pain came on suddenly and was associated with tenderness and constipation, but no vomiting. Does not think anything that he ate caused the trouble. Has been subject to bellyache for two years, but has had no attacks as severe as the present one. The pain has persisted ever since it began, being a little better for a day or so, and then again worse.

On admission, has pain and tenderness in right iliac region; there is rigidity of right rectus. Blood count: Hemoglobin, 75 per cent.; 4,550,000 reds and 16,000 whites.

Operation, Jan. 18, 1900. The patient was etherized and a long incision made through the rectus muscle. The cecum and appendix were bound down by dense adhesions; when the bowel was finally freed, it was bleeding from numerous points.

An attempt was made to cover the bleeding points with folds from the contiguous peritoneal coat of the cecum. In doing this it was found that the serous coat of the bowel was soft and friable. The appendix was cut out of the cecum, and the wound closed with Lembert sutures. Two large pieces of iodoform gauze were left in for drainage, and the wound partially closed.

Patient died five days after operation, with symptoms pointing to septic absorption from gangrenous bowel, although no postmortem examination was made.

This case was probably one of subacute appendix of two years' standing, and ought to have been operated upon long before.

CASE 4.—A. H., aged 18 years, single. Admitted May 13, 1900, to German Hospital, with the following history:

Parents are in good health; 2 brothers died in childhood; 2 brothers and 3 sisters living and well. Except for the diseases of childhood has always been well. Menstruation normal, began at 16 years.

Present illness began two weeks ago with a sharp pain in the right side, accompanied by tenderness and vomiting. The pain continued three days, then gradually subsided, only to return in two days, and was again associated with vomiting. Yesterday—May 12—was the last attack of sharp pain; it lasted several hours, during which she vomited twice.

On admission there is no pain, no tenderness, no rigidity, no nausea or vomiting. No mass palpable through the abdominal wall, but a distinct mass, tender to the touch, is felt through the rectum.

Operation, May 14, 1900; Incision made through the right rectus. The cecum and coils of small bowel in the right iliac fossa were adherent, and when separated a small abscess behind the cecum was ruptured liberating about 50 c.c. of offensive pus. Gauze had been packed about the region to wall off the general peritoneal cavity. The appendix was part of the wall of the abscess referred to, and as it was not sufficient to account for the mass felt in the pelvis per rectum, the pelvis was explored, and an abscess was found containing about 160 c.c. of very malodorous pus. This was evacuated, and a glass drainage tube was inserted. A counter opening was made in the flank, and rubber drainage introduced. One piece of gauze was lightly packed about the rubber tube, to control some bleeding, and two pieces of gauze were placed about the glass drainage. The wound was partially closed with through-and-through sutures.

May 15. Fecal material is coming through the glass drainage. Glass drainage tube removed.

Patient died on the seventh day, May 21, with symptoms of general sepsis.

Urine albuminous with hyaline and granular casts.

This case illustrates what serious conditions may be present, and yet show very few symptoms. Of course, operation should have been done two weeks earlier.

CASE 5.—R. J., aged 14, single, schoolboy. Admitted May 19, 1900, and the following history obtained:

Has been sick for three days. The attack came on suddenly with severe pains in abdomen, nausea and vomiting. On admission abdomen distended and painful to touch. Operation as soon as admitted.

An incision was made through the right rectus muscle. On opening the peritoneum a large quantity of yellowish fluid containing white flakes escaped. The appendix was found in the pelvis, surrounded by a large quantity of very offensive pus. The appendix was ligated and excised. Glass drainage tube placed in pelvis. The general abdominal cavity was then thoroughly washed with saline solution. Iodoform gauze placed in for drainage. Part of incision closed with silkworm-gut.

The patient died two days later of general purulent peritonitis.

CASE 6.—S. J. N.. Acute appendicitis. Admitted May 28, 1900.

Was sick for ten days before admission; complained of nausea, constipation, pains in abdomen, and tenderness in right side. Two days before admission symptoms became severe.

On admission: Abdomen distended, tympanitic and very painful. Pulse rapid and wiry.

Operation: Incision about 6 inches long made through right rectus muscle. On opening peritoneum about one gallon of cloudy, yellowish serum escaped. Intestines red, covered with exudate, lusterless. The appendix was bound down by adhesions and was gangrenous and contained pus. Appendix was removed; large quantity of offensive pus found in pelvis.

Glass drainage put in pelvis, and three pieces of iodoform gauze packed in, ends being brought out lower part incision. Balance of incision closed with silkworm-gut sutures. Urine albuminous with hyaline and granular casts.

Patient died on third day after operation of septic peritonitis.

CASE 7.—M. M., 13 years. Admitted Nov. 15, 1900. Has never had an attack of acute abdominal pain. Has had several bilious attacks in which he had headache and vomiting.

Two days before admission he began to feel sick, nausea and vomiting. The night before admission he was suddenly taken with acute abdominal pain—very severe cramp colic—and vomiting. His bowels moved on day of admission. He had no chill.

When admitted had temperature 102. Pulse 124 and rather weak. He was cyanosed, hands were cold, complained of much pain and tenderness in abdomen. Passed no flatus. Abdomen was very rigid, tender, slightly distended, and tympanitic.

Under ether, the abdomen was opened through the right rectus. Upon opening the peritoneum the pus gushed forth. The abdomen everywhere was filled with foul-smelling, yellowish, thin pus. The intestines were very much inflamed, and in some places covered with lymph and plastic exudate. The appendix, which was behind the cecum, was slightly adherent, gangrenous, perforated in the middle. It was ligated and removed. The abdominal cavity was flushed very thoroughly with saline solution. A glass drainage put in pelvis, and five pieces of iodoform gauze.

During the operation he had a poor pulse, so rapid that it could not be counted. After the operation it was very weak. He vomited, became delirious and very restless. Morphin was given, but it did not act and he suddenly died 21 hours after operation of purulent peritonitis.

CASE 8.—B. W. S., age 22 years. Admitted May 31, 1900.

First attack two weeks ago after riding wheel very fast. Was taken suddenly sick with severe pain in abdomen, which became localized on right side. He was treated for a sprain; has been getting progressively worse. Pain not so severe.

On admission: Very tender right side; a fluctuating mass can be felt in the right iliac fossa.

Operation: Incision about 6 inches long made through right rectus muscle; after walling off general cavity with sterile gauze, abscess opened, contained 500 or 600 c.c. offensive pus. Appendix behind cecum and perforated. Second incision was then made in flank to secure free drainage. Abscess cavity packed with iodoform gauze, and incision closed with silkworm-gut.

Patient died 12 hours after operation of shock and peritonitis.

CASE 9.—P. B. J., age 26 years. Acute appendicitis. Admission Feb. 5, 1900.

Patient was too ill to get a history. Only a few questions were asked. It was his first attack. Had been taken ill suddenly one week before coming to the hospital. Thought he had an ordinary bellyache and did not send for the doctor until two days later. There was at first great abdominal pain and tenderness all over the abdomen, accompanied by vomiting. The pain gradually localized in the right iliac fossa, and became more severe.

On admission: Patient was having considerable pain, and was exquisitely tender. The rectus was rigid, and there was a mass in the right iliac fossa.

February 6, operation: Patient etherized and a long incision made through the rectus. The cecum and a part of the ilium gangrenous. There were numerous adhesions. In the effort to free the appendix a large abscess below the cecum was ruptured, and a quantity of foul pus liberated.

Blood count: Hemoglobin, 78 per cent.; erythrocytes, 5,020,000; leucocytes, 41,600.

Died 36 hours after operation. Temperature 104 degrees.

CASE 10.—Miss M. S., age 27 years. Admitted June 10, 1900.

On admission the patient had pain in the right iliac fossa. There was rigidity, tenderness and dulness in the right iliac fossa. Vaginal examination revealed a tender mass to the fossa of the cervix.

June 10, operation: Incision through the right rectus. Cecal region walled off with gauze. Appendix found turned on itself and behind the cecum. In the attempt to release it an abscess was evacuated. Appendix ligated and cut off. Two pieces of iodoform gauze and a rubber tube were put in as drainage.

Urine albuminous, granular casts.

Patient died on the third day with symptoms of general purulent peritonitis. If organ had not been searched for the abscess would not have been discovered.

CASE 11.—W. B., age 52 years. Acute appendicitis. Admitted July 7, 1900.

Family history negative. Always in good health until 50 years of age. Complained then of malaise. Appetite good; bowels constipated; throat felt dry; drank large quantities of water. Passed large quantities of urine. One year ago had right leg bruised. Broke down and had open sore for two or three months. Six months ago noticed left big toe black and stiff. Small sore under toe which was discharging. This went on until had an ulcer along tendon leading to big toe; three months later toe came off; no pain. Now complains of dryness of mouth and throat. Drinking does not satisfy. Is beginning to lose appetite; some nausea and vomiting; lost weight; 12 days ago had an attack of cramp-like pains in abdomen; came on suddenly; nausea and vomiting. Three days later had fly blisters put on right side. This raised blister which instead of healing left two running ulcers.

On admission: An exquisitely tender and very hard mass can be felt in the right flank and iliac fossa. No fluctuation at this time. Later the mass broke down and showed fluctuation. Not so tender.

Operation: Incision about 2 inches long made transversely above crest of ilium under local anesthesia. Large quantity, 500 c.c. E, dark vile-smelling pus evacuated. Abscess cavity washed out and three pieces rubber tubing inserted for drainage. Wound then dressed antiseptically.

While pus was being evacuated a piece of rotten tissue came out, was about 4 inches long and ¼-inch wide. Could not tell what kind of tissue. Supposed to be appendix. Died on third day after operation in diabetic coma.

CASE 12.—H. K., age 17 years. Acute appendicitis. Admitted June 8, 1900.

Always in very good health until two months ago, when had an attack of appendicitis. Was then sick for several days. Attack came on suddenly with cramp-like pains in abdomen, very severe. These pains lasted for several hours, then had pain in lower part of abdomen, particularly in right side. Was then up working on delivery wagon, noticing at times slight pains in right side when jumping off wagon. Two weeks later had another attack lasting three or five days. Few days later had third attack, was sick for two days, but did not have to go to bed. Present trouble began two days before admission; had cramps in abdomen for short time, since then had continuous pain in lower part of abdomen and right side. Has vomited twice. Examination shows tenderness on pressure in left and right inguinal regions. Rectus muscles, both sides, more rigid than normal, especially right.

Operation: Incision about 3 inches long made through right rectus muscle; appendix found in pelvis bound down by adhesions. After protecting general peritoneal cavity by packing with gauze, adhesions broken up, finding several c.c. of purulent, bad-smelling pus.

Death due to general septic infection.

Did not have a general peritonitis; in this case the abscess was not discovered until the appendix was searched for.

CASE 13.—C. C., age 22 years. Acute appendicitis. Admitted Dec. 24, 1900.

Patient has always been in good health with the exception of slight colds and an attack of influenza. His habits good. Does not use tobacco or alcohol. Denies venereal diseases. Has never had an attack of appendicitis before. Bowels regular. Appetite and digestion good.

Five days before admission he complained of feeling unwell. He had pain under the lower border of ribs on the right side. He had no appetite. Bowels moved regularly.

The pain became worse and more general, but more marked on right side, from the level of the umbilicus to the lower border of ribs. The pain was constant and cramp-like, and two days later there was marked tenderness all over right side, high up, near gall bladder, but pressure over the appendix caused the pain to become worse. Appendicitis with the appendix pointing up toward the liver was diagnosed. There was no marked distension or dulness.

Under ether an incision was made at McBurney's point. The abdominal walls were not thoroughly relaxed. The appendix was very long, and ran under the cecum up to the liver, and was gangrenous in three places. It could not be delivered in the usual manner, so the proximal end was ligated and then pulled out without ligating the appendicular artery, which was so deep that it could not be reached. There was pus present behind cecum. Drainage by rubber tube in loin and six pieces of iodoform gauze.

After operation his pulse became very rapid and there was a marked hemorrhage through the loin incision, which was controlled by packing with gauze.

His abdomen became distended on second day; pulse was very weak. He received streptococcic serum, but it had no effect. He was transfused four times the last 36 hours before death, receiving 8500 c.c. salines. He became restless, delirious, and on receiving hyoscin and morphin, he slept until the end without being conscious.

Incision was not opened for postmortem.

December 25: Hemoglobin, 95 per cent.; erythrocytes, 4,110,000; leucocytes, 14,200.

December 26: Hemoglobin, 90 per cent.; erythrocytes, 4,150,000; leucocytes, 20,400.

Probable post-operative gangrene of cecum. The hemorrhage after operation was an important factor in this man's death, as it lowered his powers of resistance.

CASE 14.—J. D. Acute appendicitis. Admitted May 7, 1900.

Had been sick for three days; was taken suddenly sick with acute pains in abdomen, which became localized in right side; bowels constipated. On admission found exquisite tenderness, right side. Rigidity of right rectus muscle. Mass can be felt in right flank.

May 8, operation: Incision through right rectus muscle. Appendix behind cecum bound down firmly by adhesions. Abscess behind cecum extending upward and backward. Appendix perforated at distal end. Abscess evacuated and appendix removed and hole in cecum closed. Incision made in flank, rubber drainage tube inserted. Abscess cavity packed with six pieces of iodoform gauze.

May 9, 7 a. m; few râles noticed over right side of chest; 10:20 a. m., crepitant râles; increased fremitus and resonance, right base; slight cough.

Died on second day after operation of pneumonia.

Urine contained albumin and casts.

CASE 15.—J. S., age 52 years. Acute appendicitis. Admitted March 24, 1900.

Patient was suddenly taken ill two and one-half days before admission, with pain, nausea and rigidity. Pain became localized to right iliac fossa. Operation advised, and took place 20 minutes after arrival in hospital, so that little history was obtained.

Much pain, distension, and shock on admission. No flatus or feces passed for 12 hours. Probably due to a paresis of bowel.

March 24, operation: Incision 5 inches long in right rectus. Peritoneum opened; bowels red, injected, and much distended. Appendix behind cecum, bound down by adhesions and gangrenous. Patient died on operating table.

CASE 16.—C. H., age 21 years. Acute appendicitis. Admitted May 28, 1900.

Sick four days. Attack came on suddenly with severe pain in abdomen, nausea, vomiting and constipation. No passage of gas. Abdomen distended, muscles rigid and exquisitely tender.

Operation: Found general purulent peritonitis. Appendix bound down by dense adhesions, and surrounded by inflammatory lymph. Appendix, which pointed toward pelvis, was gangrenous, as was cecum near attachment of appendix. Appendix ligated and excised. Glass drainage with four pieces of iodoform gauze packed around.

Patient did not come out of ether, and died four hours after operation.

CASE 17.—E. A. G., age 28 years. Acute appendicitis. Admitted May 19, 1900.

Has had trouble for several years.

Operation: Incision made parallel to Poupart's ligament, opening up abscess which extended down into the pelvis. Second incision then made through right rectus muscle, intestines bound together with firm adhesions, and between the coils numerous small cysts filled with dark, cloudy fluid. Appendix, which was gangrenous, was found in pelvis, was ligated and removed. Large cyst of right broad ligament, both ovaries cystic.

Glass drainage tube and two pieces of iodoform gauze put in place, and incision partly closed with silkworm-gut sutures. First incision packed with iodoform gauze.

During operation patient's lungs and trachea became full of mucus. Pulse weak and rapid. Face blue. Inability to breathe. Tracheotomy then done and patient revived after artificial respiration kept up for several minutes.

10 p. m., patient transfused 3000 c.c. saline solution. Died at 6 a. m., 12 hours after operation, from shock.

CASE 18.—J. B., age 19. Acute appendicitis. Admitted Nov. 20, 1900.

Has never been sick in bed. Had several slight colds. Denies gonorrhea and syphilis. Had an attack of abdominal pain which lasted four days in August.

Had an attack of acute abdominal pain at 10:30 last night. Came on gradually with acute pain all over the abdomen, localized near umbilicus. No localized pain at McBurney's point. Bowels moved soon after attack began. Was nauseated and vomited. Could not sleep on account of pain, which was dull in character with occasional paroxysms. Had eaten nothing unusual before the attack.

When admitted had pulse of 116. Temperature 101 4/5. Had received a hypodermic of morphia before he was admitted, from effects of which he was drowsy. Had no pain and was not tender on gentle touch over the appendix or on the left side. The abdomen was markedly rigid on both sides. No dulness noted. Did not vomit. Lungs clear; heart normal; liver dulness, not enlarged; spleen normal.

Operation: Under ether, an incision was made through the right rectus muscle. On opening the peritoneum, pus escaped. There was pus all over the abdomen. The bowels were injected. Large pieces of gauze were put into abdomen to wall of the bowels, and the appendix, which occupied the pelvis, was then delivered, ligated, cut off, and the stump washed with bichlorid and carbolic solution. A glass drainage tube was introduced into pelvis, and there was a great discharge of pus. The most of the purulent matter, which was creamy in color, and of not very foul odor, was in the pelvis. A large piece of iodoform gauze was put down into the pelvis, one along the cecum, and one over the intestines. Three pieces of gauze and a glass drainage tube left in. The wound was partially closed with silkworm-gut sutures through and through.

Second day after operation, began to have distension of abdomen, passed no flatus. Pulse became weaker. The distension soon became marked. He began to vomit and was restless. The gauze was removed on the fourth day, when he showed all the symptoms of a general peritonitis. He was transfused with 2000 c.c. salines. He was conscious to the end. The pulse was better after the transfusion for six hours only. He died while vomiting; the vomit seemed to get into his larynx and strangle him. Urine scanty and albuminous, with granular casts. General peritonitis.

CASE 19.—M. K., age 25 years. Acute appendicitis. Admitted Aug. 19, 1900.

Had had several well-defined attacks of appendicitis during the past four years, none of which, however, were very severe.

Present illness began suddenly 10 days before admission, with severe cramp-like pains in the abdomen accompanied by diarrhea and vomiting. Later the pain localized itself to the right iliac fossa, where he was very tender and a mass could be distinctly palpated.

Operation: Performed immediately after admission. Incision 5 inches long through right rectus muscle. Bowels packed away with sterile gauze. Abscess found behind the cecum, with the appendix, which was inflamed, bound down in the pelvis by adhesions. Adhesions broken up and appendix ligated and removed.

Patient reacted from the ether, but during the second twenty-four hours after operation vomited a few times. Passed gas freely and bowels moved on the second day and stomach became retentive. Patient was excessively nervous and at times became delirious.

Tube became perfectly dry on the 4th day, and was removed along with the gauze and replaced by two rubber tubes. Patient's nervousness and restlessness increased every hour, in spite of all that could be done to control it, and he died finally of exhaustion on the 7th day after operation, due to septic infection.

Urine scanty and albuminous, containing hyaline and granular casts.

CASE 20.—J. K., age 29 years. Acute appendicitis. Admitted Dec. 7, 1900.

Father, mother, two brothers and two sisters living and well. No family history of phthisis. Had the milder diseases of childhood. Enteric fever in summer of 1899. Has not been well since. Always complained of pain in chest and abdomen.

Nov. 5, 1900, was taken suddenly sick with abdominal pain, which was very severe for a few hours, and came on again from time to time. December 1, he was again taken with severe pain, vomiting, tenderness in right iliac fossa which gradually grew worse. Had history of phthisis. When admitted he had a mass in right iliac fossa, prominence of w' could be seen. He was very tender, there was dulness present and marked rigidity. He was operated upon as soon as admitted.

Under ether, incision was made through right semilunar line; there was a large mass on right side walled off by small bowels and omentum. The abscess cavity was between the parietal peritoneum and the cecum. This was opened and thoroughly cleansed by bichlorid solution. Part of the omentum was indurated; this was tied and cut off. The appendix was on the cecal side of the abscess. It was gangrenous, very large and fragile. It was tied off and removed.

Five pieces of iodoform gauze and a glass drainage tube was put into abscess cavity and part of wound closed with silkworm-gut sutures.

After the operation his pulse was better than before. He was restless, vomited and hiccoughed a great deal. Tube was cleaned, and contained pus and blood. He did not cough. Stomach was not retentive. Twelve hours before death he became very restless, pulse became very weak. He was conscious to the end. Vomited fecal matter, bowels became very loose, and died with symptoms of peritonitis.

Blood count: Hemoglobin, 68 per cent.; erythrocytes, 4,470,000; leucocytes, 19,000. Urine albuminous and casts. General purulent peritonitis.

CASE 21.—M. S. M., aged 30 years. Acute appendicitis. admitted Sept. 25, 1900.

Has had six attacks of appendicitis of varied intensity and duration, from a few hours up to 10 days. Usually vomited with the attacks.

Present attack began 24 hours before admission; had had diarrhea for a day or two before. Was suddenly seized with general abdominal pain and vomiting, after a few hours pain became localized to right iliac fossa, where it became very severe, and was accompanied by exquisite tenderness. Pain was so severe that he had taken 2½ grains of morphia in the twenty-four hours before admission, without entirely controlling it.

On admission: Temperature 102, pulse 96 and soft. Abdomen slightly distended; right rectus very rigid; exquisitely tender in right iliac fossa, where there is a sense of fulness on palpation, although no distinct mass can be made out.

Incision 6 inches long through right rectus muscle. Appendix found to be perforated and gangrenous, and to be tied up with the cecum. and small bowel in mass of adhesions. A small quantity of pus around the appendix. Pus evacuated and appendix freed, but on tightening it, tissues so friable that it cut through. Hole in cecum closed as well as possible, but owing to its devitalized condition stitches cut out very often. Meso-cecum brought over the place and fastened there; omentum too gangrenous to serve. Lower part of omentum ligated and cut off. Three pieces of iodoform gauze packed around the infected area separating it from the general abdominal cavity. Upper and lower parts of wound closed.

Patient came out of ether all right, but after a few hours general peritonitis set in, and patient died about 60 hours after operation.

CASE 22.—Mrs. R. O'B. Acute appendicitis. Admitted Jan. 19, 1900. Has always had good health. No previous attack of appendicitis.

The patient was taken ill with fever, slight abdominal pain, some diarrhea, headache, pains in back and legs, and marked malaise. This was about seven weeks before she was brought to the hospital. For some time she was treated on the supposition that she had influenza of the gastro-intestinal type, or a mild enteric fever, although there were no spots or nose bleeding. Then the diarrhea was followed by constipation, the abdominal pain became much more severe, and was cramp-like, the right iliac fossa began to be markedly tender on the slightest palpation, and on careful examination a slight localized mass could be made out in the appendiceal region. There was no vomiting. The patient and family were advised that an operation was necessary, but refused to follow the advice. Patient gradually lost flesh and strength, and attained a septic appearance. At times she would perspire freely, and at other times have chilly sensations. The pain gradually disappeared to a large extent. The mass was easily palpable. The fever persisted and was decidedly septic in character. Finally an operation was consented to.

Operation: January 21, an incision about 4 inches in length was made through the right rectus muscle. An abscess about the size of a goose egg lay back of the cecum, and in this lay the gangrenous appendix, running up to the posterior aspect of the cecum so that the tip almost reached the lower border of the liver. The pus was evacuated, and the appendix, with the neighboring necrosed structures and indurated masses of tissue, was removed. The weakened and in places slightly ruptured portions of the posterior aspect of the cecum were sutured with fine black silk. A counter incision was made in the flank to permit through-and-through drainage.

Urine albuminous. Hyaline and granular casts.

Died on the 12th day after operation. Bowels very loose from operation to time of death. Pulse rapid and weak.

Symptoms pointed to death from septic absorption from gangrenous bowel.

CASE 23.—J. E. V., age 36. Acute appendicitis. Admitted Nov. 23, 1900.

Has never been sick in bed except with appendicitis. Two years ago had an attack of appendicitis. Was sick six weeks. Bowels inclined to be constipated. Had an irritable stomach.

Present attack began about 10 days before admission; had pain in his abdomen, which became very severe a few days before admission. Vomited very often. Pain and tenderness were much worse on right side. When admitted he had temperature 101, pulse 112. Had a large mass in right iliac fossa.

Under ether an incision was made on the right side, going through the rectus muscle. The appendix, which pointed towards the pelvis, was bound down by many adhesions. The large and small bowel were adherent. The adhesions were

separated in freeing the appendix, which was markedly inflamed and surrounded by pus. The appendix was ligated and removed.

Developed a fecal fistula a few days after operation. Patient was never strong after operation. Stomach was irritable. An abscess developed in right buttock. Several days before his death there was pus in his stools, and after it made its appearance he began to sink. It was caused by the rupture of a deep abscess in his buttock, rupturing into the rectum. This wound was opened after death. The intestines were in good shape. The kidneys were enlarged, and the seat of parenchymatous inflammation. Underneath the peritoneum and traveling along the psoas muscle was an abscess which pointed in the buttock, and ruptured into the rectum. This so weakened him that he finally became delirious and died.

Urine albuminous with hyaline and granular casts.

On admission, blood count: Hemoglobin, 75 per cent.; erythrocytes, 4,970,000; leucocytes, 14,800.

CASE 24.—C. L., aged 17 years. Acute appendicitis. Admitted Jan. 29, 1900.

One week before admission the patient was suddenly seized with a pain in the right iliac fossa. While there was some general abdominal pain, it was most acute in the lower right quadrant. Bowels had been sluggish for some time before this. Vomiting started the second day. These symptoms, with great tenderness, persisted until the third day, when all the symptoms diminished in severity. On the day before admission to the hospital an exacerbation of the symptoms occurred, the patient suffering more than in the beginning of the attack. On admission it was found that there was exquisite tenderness and a mass in the right iliac fossa. The right rectus was markedly rigid.

Operation: A long incision was made through the right rectus muscle. Immediately upon opening the peritoneum a large quantity of malodorous pus escaped. The intestines in the lower right quadrant were matted together by adhesions, and there was an abundance of organized lymph gluing everything together. After considerable work separating the bowel, the head of the colon was freed sufficiently to locate the appendix. It was in such a position to the inner side of the cecum as to point toward the spleen. There was a small perforation near the distal end, and the entire organ was encased in organized lymph. As the cecum could not be brought out of the wound, the appendix was ligated and cut off the cecum. Glass drainage.

February 22. Intestinal obstruction: The patient has been having severe pains off and on for a week or two, and they have been growing worse, coming oftener, and lasting longer. Yesterday he began to vomit. To-day vomiting, no flatus and the outline of the bowels showing on the surface of the abdomen. Great pain. In a fit of coughing broke the wound partly open, and the intestines protrude.

Old incision opened; numerous adhesions found, and at one point the ileum was caught in such a way as to be an obstruction to the lumen of the bowel. Below this point it was collapsed, above inflated. The bowel was freed and all adhesions broken up, and the wound closed as usual.

Patient died within 12 hours after the second operation. Intestinal obstruction from adhesions.

CASE 25.—A. B., aged 50 years. Acute appendicitis with abscess. Admitted Aug. 23, 1900.

Patient was admitted on the eighth day of an attack of acute appendicitis. Could speak Italian only, and no history was obtainable. On admission temperature was 100 degrees, pulse 96. Has a large tender mass occupying the right iliac fossa.

An incision 7 inches long was made through the right rectus muscle. Immediately on opening the peritoneum a large collection of pus was encountered; this escaped both externally and into the general peritoneal cavity.

The abscess wall was found to consist of thickened mesentery and coils of small bowel, glued together by inflammatory exudate. Appendix, which pointed toward the cecum, was ligated and removed.

The patient came out of ether nicely, and was comfortable all night, but on the next day general peritonitis began, and the patient died 48 hours later.

CASE 26.—J. S., age 20. Appendicitis; chronic ovarian cyst. Admitted Aug. 7, 1900.

One year ago had an attack of appendicitis, was sick six weeks. Since then complained of a feeling of fulness and some pain in the right iliac fossa. No nausea or vomiting. Menses normal.

Examination shows tenderness on pressure in the region of appendix.

Operation: Incision made through right rectus muscle. General peritoneal cavity walled off with gauze; found ovarian cyst about size of an orange. Appendix in pelvis, and bound to cyst by numerous adhesions; many small cysts between knuckles of bowels, filled with yellowish, muddy fluid. Adhesions broken up and right tube and ovary removed. Cyst was filled with dark-yellowish, cloudy serum. Appendix, which showed chronic inflammation changes, was ligated and removed. Great omentum was adherent to cyst. These adhesions broken up, omentum ligated and about 1½ inches excised. Glass drainage tube put in place and wound closed.

Patient was apparently doing well after operation, bowels moving freely on the second day. On the third day glass drainage was removed, and wound closed completely, by tying the previously introduced stitches.

Twenty-four hours later symptoms of general septic peritonitis began, with pulse of 132. Vomiting was practically continuous, and in a few hours became the typical black vomit of septic peritonitis. Abdomen became tympanitic and was extremely tender. Twenty-four hours after onset of peritonitis, the lower part of the incision was opened, and the abdomen flushed out and drainage again introduced. This, however, failed to arrest the progress of the disease, and the patient died on the sixth day after operation.

Infected at the time of removal of the drainage tube.

CASE 27.—E. D., aged 38 years. Acute appendicitis. Admitted April 2, 1900. Had congestion of brain and spine three years ago. Present trouble began February 10, complained of general abdominal pain, cramp-like in character; later pain localized, right side. Bowels regular. Vomited for 3 or 4 hours.

On admission find mass in right side about 4 inches long by 2 wide, very hard, and painful to touch. Can not straighten out right leg. History of having passed pus from bowels four times.

First incision 3½ inches long, made just inside anterior superior spine of ileum, near mass, at angle of about 45 degrees to Poupart's ligament and running up and outward above anterior superior spine. On reaching external oblique muscle, found it hard and indurated from inflammatory infiltration. On cutting deeper, knife entered mass soft broken down anterior. This was washed out with carbolic and bichlorid. Lightly packed with two pieces of iodoform gauze.

Second incision made to right median line through right rectus muscle into peritoneal cavity. On elevating abdominal wall, fouad ileum and cecum adherent to parietal peritoneum; cecum separated from peritoneum with difficulty. This done, the appendix was found behind and to the outer side of cecum, encased in considerable amount of organized lymph.

Blood count; Hemoglobin, 79 per cent.; erythrocytes, 3,840,000; leucocytes, 21,580. Urine normal. Died on third day after operation of general purulent peritonitis.

This case is probably one which was infected at the time of operation, although every precaution to protect the peritoneum was taken. Abscess of the abdominal wall.

Early Sign of Measles.—Two French writers have recently called attention to the sore throat, studded with white dots, which they have observed in a large number of cases of measles. This sore throat precedes the other symptoms of measles by several days, and the diphtheria bacillus was found in the throat in several instances, leading to an erroneous diagnosis.

SYMPTOMATOLOGY OF CEREBRAL HEMORRHAGE.*

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PHILADELPHIA.

The symptoms of cerebral hemorrhage, in unison with many other of the acute affections of the central nervous system, are so frequently aberrant and simulated by different diseases producing a sudden insult to that vital organ of the body, the brain, that rehearsing the subject as a whole seems timely before this representative body. We shall dwell upon the cardinal symptoms in due measure, we trust, and yet hope to point out the more unusual signs resulting from rupture of the cerebral vessels. Coming under the head of cerebral hemorrhage, not only an extravasation of blood in or about the brain, but thrombosis or embolism producing acute softening, which latter is indeed difficult to distinguish from a slow exudation of blood within the encephalon. This latter condition was shown recently in consultation with Dr. Küsel in a man, aged 63, visited on March 7, 1901. There was no history of alcoholism or specific disease. He had had, five years ago, an "attack" in which vertigo was a prominent symptom, there being no paralysis resultant, but he was left with difficulty of speech (motor aphasia) and acute asthenia following the injury to the brain, which confined him to bed for three weeks. The man had never been well since; he complained of feebleness but no paralysis, the speech defect remaining up to the day of his present illness, which occurred Feb. 1, 1901. His speech first becoming worse as to the aphasia, he was taken to his bed with what was pronounced a complicating attack of influenza. About a week after he had been confined to the bed, it was noticed there was some weakness of the right upper and lower extremities, and of the body. There was never conjugate deviation of the eyes. When I saw him on March 7 he was moribund; there was no pupillary response, nor could reflexes be detected anywhere. The temperature in the right axilla was 105.8 F.; in the left axilla, 105. The bladder was distended with urine which, when drawn, proved negative; this in all probability eliminated nephritis as an etiological factor.

The particular symptom occurring for three or four days before death perhaps has some weight in the diagnosis of these cases from hemorrhage *per se*, i. e., the symptom of decided mental excitement, still somewhat under the control of the individual. This was shown by the fact that this man, during the spells of hallooing at the top of his voice, could be quieted for the time being by his wife's forcibly correcting him, the patient relapsing again into excitement; he could not explain why he had cried out so. As said before, it seems to me that this symptom deserves some stress laid upon it as a sign of acute softening of the brain rather than massive hemorrhage, where, as in this case, it is difficult to determine the extent of the motor paralysis.

At necropsy, we found an area of softening in the left parietal lobe extending down to the lateral ventricle, the size of a silver dollar at its base on the cortex, due to arteriosclerosis of the cerebral arteries, especially of the posterior cerebral artery.

Symptoms of a typical case of cerebral hemorrhage are divided into those of the acute stage and those of the later or chronic stage. While the patient may have been feeling some premonitory signs, such as dizziness, headache and dulness of mentality for some days or weeks before the onset of the attack, still it is the rule that he is feeling particularly well immediately preceding the apoplexy, which in the majority of instances occurs during the sleeping hours of the night. This fact has always interested me from a psychological point of view, and is probably explained by the fact that inhibition generally is lessened during the early hours of the morning and very likely there is much less resistance within the encephalon, thus allowing overdistension of the cerebral vessels which produces the "breaking strain" in sclerosed cerebral arteries. This does seem somewhat paradoxical when considered in relation to physics, since increase of vascular area and therefore capacity to bring lessened arterial tension at any given point; but as inferred above, the greatly reduced "force de résistance" at the vulnerable point occurring at the site of a patch of sclerosis and fatty degeneration, will permit overdistension of the media and thus rupture. The patient, therefore, in 50 per cent. of instances on awakening, discovers that he is paretic or totally paralyzed in one side of the body. There may be little or no sensory phenomena so-called; the effort to move alone attracts his attention; or it may be that a motor aphasia is the only symptom the patient complains of, which in itself produces a mental excitement from apprehension as well as, no doubt, from disturbing the proper co-relation of neuronic force—the so-called nervous energy. This leads me to the suggestion to apply this same theory of disturbed nerve currents (somewhat identical with the ultimate result of disturbance of nerve energy due to the coaptation or retraction of the protoplasm of the neuron—the so-called neuronic theory) in explanation of the peculiar emotional state of the person suffering from cerebral hemorrhage. This manifestation of the psychology of apoplexy very likely may be produced by the abrupt severance of the proper association of other concept centers with the center of ideation.

If the hemorrhage has been massive, the patient will, of course, be found comatose. The conjugate deviation of the eyes will occur towards the affected side, the pupils will be dilated generally one more than the other and will be only slightly responsive to light stimuli. The reflexes will be found abolished on the affected side at this stage. At the end of a few hours, the knee-jerk and other reflexes which have been abolished now return and become increased from day to day due to irritation of the motor tract from the cerebral lesion whether it be a hemorrhage, embolus or thrombus. The patient will breathe heavily; perhaps the Cheyne-Stokes style of respiration will prevail. The temperature will be found increased both on the surface, where the affected side of the body shows an increase of 2/5 or 3/5 above the opposite side, the degree of caloric developed being 102 to 103 in the axilla and slightly above this when taken under the tongue or in the rectum. The patient generally lies supine, the paralyzed extremities may be hyperesthetic and within an hour or so when consciousness partially returns, if the case progresses favorably, the patient will frequently brush away the clothing or any irritating body, as a house fly, which may light on the paretic member. If the patient is to recover, the temperature drops at the end of four or six hours; the pulse which had been slow and full will become softer and will increase in frequency to slightly above the normal. Flushing and cyanosis of

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs Frederick Peterson, Hugh T. Patrick and H. A. Tomlinson.

the face will then disappear and the mentality be restored gradually, although the mental anxiety and lacrymoses may be shown at once in the physiognomy of the patient, aside from any paralysis in the face or vocal apparatus which may maintain. This sudden change of expression of the individual is an interesting and sad indicator of the havoc played by extensive organic rupture in the brain mass. There usually is a secondary rise of temperature even in a favorable case, due no doubt to irritation of the heat regulating mechanism; finally, after six or seven days, the temperature will remain irregular and hovering about the normal line. Within ten days or two weeks in the average case, the patient may be able to move about with the assistance of crutches if his previous condition of health has been fair; if he has been in a low stage of health, the ability to use the musculature will be proportionately lessened, all depending therefore on the idiosyncrasy and reserve nerve force. As a rule, it is safe to say that the patient's nervous system is insulted enough by any sort of hemorrhage to warrant absolute quiet for a fortnight, which should be carried out religiously by the physician if relapse is to be prevented.

The diagnosis of pachymeningitis interna hæmorrhagic might at first seem unnecessary to mention in a paper on symptomatology of cerebral hemorrhage, but the condition is most difficult to diagnose. Two cases recently coming under my observation will uphold this view.

In my own case, that of J. McM., white, age 38, admitted to the Philadelphia Hospital on March 4, 1901, gave a history of previous venereal infection and that he had always been a heavy drinker. He had lately been intoxicated for three weeks, had mental stupor when first examined with hallucinations of hearing and sight. For the past three years he has been more or less a sufferer from shooting pains in the legs which he says were slightly rigid; this rigidity did not grow worse, although there was no lessening of the symptom. About two months before admission, the patient complained of incontinence of urine; and about a week previous to admission, of incontinence of the rectal muscle. On examination, the pupils were equal and slightly irregular in outline, the right pupil being smaller, both reacting sluggishly to light. The tongue was protruded straight; the speech was slow but not tremulous; the pulse was slow, intermittent, irregular. There was marked arteriosclerosis. The patient lay heavily in the bed in log-like inactivity, moving the arms and legs but slightly. The right leg was markedly spastic, the knee-jerk being very much exaggerated but the spasticity so great as to prevent the development of ankle clonus. There was no local atrophy; there was hyperesthesia of the plantar surface of the right foot; there was no Babinski reflex; there was but slight spasticity of the left leg and foot. Knee-jerk was greatly exaggerated and feeble ankle clonus was present. Sensation of pain and touch seemed absent over left foot and leg to the level of the knee; there was feeble plantar reflex on the left; sensation was retarded over the remaining portion of the left lower limb. There was much spasticity of the arms, the patient being lifted from the bed while lying supine, when there was forcible extension of the forearms of the right side, evidently caused by the contraction of the scapular and trapezius muscles. The spasticity was of lead-pipe quality, more marked on the right side, but also present as stated on the left. Sensation to pain was present, not localized as to point of pressure, but referred downward in the course of the periphery of the nerve.

Examined March 8, it was noted that the left pupil was twice as large as the right; the man was in a semi-conscious condition; answered questions only in monosyllables; there was marked tremor of the lips; the right elbow could not be extended to a right angle, the right arm being held pronated. The patient had a fair grasp in the right hand; but there was no grasp in the left hand, though the spasticity in the left arm seems almost as great as that in the right; the right leg was very spastic and a large tremor grew as it was raised from the bed. There was no clonus on the right side nor on the left to-day; there was no evidence of ecchymosis anywhere. There was flexion of ankle on irritating the sole of right foot, although the toes themselves did not extend as is usual in the Babinski reflex; in the left foot, the toes did extend on irritating the sole, although there was not as much extension as of ankle flexion as compared to the right side. The skin was reddened in the sacral region. Hearing was much obtunded, although he could appreciate the watch tick on contact. There was some slight retraction of the neck. Patient lies supine. There is no form of aphasia present to account for the difficulty of expressing himself; this being entirely mental. There is no astereognosis in the right hand, but the left hand seems to be anesthetic in the palm and up to the forearm to the elbow, making absence of ability to appreciate objects in shape and size.

March 9, the patient is more stuporous, although he will answer questions in monosyllables.

March 10, patient seems somewhat brighter, complains of general pain in the head. Pupils are almost equal in size. Right arm can be moved quite freely; left arm is spastic and can not be moved by the patient. He can move right leg freely, and left leg not at all. Both legs are slightly spastic, but much less so than two days ago.

March 11, patient is perspiring freely. Seems rational, although he talks in a very low voice. Complains of pain in chest. A few sonorous râles. Resonance clear.

March 13, patient is incoherent; will obey commands, however; opens and shuts his eyes.

March 16, pulse soft and rapid. Respiration rapid and shallow, not stertorous. Temperature gradually rose to 103 degrees. Death supervened.

Autopsy.—Upon opening skull cap, considerable blood escaped and a large hemorrhage was found. This proved to be subdural, and on the right side. It extended from the occipital to the frontal lobe and downward to the Sylvian fissure, extending into the latter so as to separate the temporal and opercular convolutions from the island of Reil. A glass held below the skull as the brain was removed, collected 50 c.c. of blood and cerebrospinal fluid. When the dura mater, containing a large clot, was removed, the surface of the brain was considerably flattened; therefore must have been under considerable pressure. Vessels of pia were deeply congested. On opening left lateral ventricle, it was distended with cerebrospinal fluid, lateral ventricle of right side compressed so as to be almost occluded. Choroid plexus of left side terminated in a soft tumor the size of a soap bean.

Case 11.—Through the kindness of Dr. James Tyson, I am permitted to report a case of similar nature though the lesion is on the left side of the brain. The man was admitted to the medical wards of the Philadelphia Hospital, and died of chronic nephritis.

Male, white, aged 71, semiconscious on admission, due to the uremia. He was able to walk about at the end of a week, with spastic hemiplegia, right side. How long, as in my own case (3 years), he had been afflicted with the dural disease, does not appear from his vague statements; although he was likely afflicted many months.

Autopsy.—Dura mater quite adherent to skull over left hemisphere; and pachymeningitis interna hæmorrhagica was found. Hemisphere below this was somewhat compressed; and the lateral ventricle below it was collapsed. Brain itself was normal. Hemorrhagic area extends over the whole superior and external portion of the left hemisphere, descending to the level of the fissure of Sylvius.

Paralysis is never so complete in the hemiplegia from pachymeningitis interna hemorrhagica, for if complete, death would supervene. Therefore, in a given case of hemiplegia, a positive sign that it is not due to dural hemorrhage, would be in the occurrence of complete pachymeningitis. Fifty per cent. of cases are unilateral in pachymeningitis hæmorrhagica.

Ingravescent hemorrhage and pachymeningitis interna hæmorrhagica have some points in common which are confusing in diagnosis. In both there is apt to be no loss of consciousness; although in the former there is less likelihood of rise of temperature, while in the latter there is elevation of the temperature curve to 102 or 103 or more degrees F., but of irregular type and associated with rather severe pain in the head. Then the spasticity which would occur from cortical irritation from pachymeningitis, would be the positive point as against hemorrhage in the external capsule.

Another differential point in diagnosis between ingravescent hemorrhage and subcortical tumor in the motor area, is to be made in some cases. The history of the case would be important as bearing upon this subject, as well as the examination of the eye grounds where optic neuritis would be present and of high grade in the case of tumor; it almost never being present in the slow hemorrhage, since the neuritis would not have time to develop at the moment of examination.

Hemorrhage into the crus cerebri would be told by the irregularity of symptoms in the first place, and secondly from the alternate hemiplegia following and generally associated with some sensory loss on the hemiplegia side and accompanied by paralysis of the oculomotor nerve on the same side.

Hemorrhage into the pons is very difficult of determination but would be told by critical examination for a crossed paralysis affecting the face on the same side, as hemiplegia in the case of hemorrhage into the upper portion of the oblongata; or secondly, of the face on the same side, if the hemorrhage were situated in the lower portion of the pons. The association of urgent cardiac and respiratory symptoms would be indicative of hemorrhage into the pons. I presented the rare specimen of a case of hemorrhage bilaterally into the pons and into one crus cerebri, this winter before the Pathological Society of Philadelphia, and which I will have the pleasure of showing to the Section. The mixed symptoms resultant from such a lesion, it would seem to me, make diagnosis quite impossible.

Hemorrhage into the spinal cord high up, would be apt to occur in specific cases and the Brown-Séquard syndrome would follow. Hemorrhage into the membranes into the cord would be associated with large paresthesia or pain distributed to the periphery of the nerves from the segment of the cord encroached upon, and in my experience, not the most difficult for diagnosis; as shown in the case seen with Professor Rodman, this winter, where diagnosis has been confirmed, I take it, by the constant improvement in the case through electric treatment, massage and rest, to quite complete restoration of the paraplegia sequent upon pressure in the lumbar cord, due to a fall down an elevator shaft. Trauma, too, is apt to be a point gotten in the history of such cases. But it is not my province to go in for discussion of disease of the spinal cord.

In the above cursory way, the writer has attempted to give the salient features that have come to his observation for actual determination of one of the most difficult neural affections within the cranium or spinal canal to positively differentiate.

DISCUSSION.

DR. HUGH T. PATRICK, Chicago—I simply wish to say a word in reference to the mystery as to why hemorrhage of the brain comes with peculiar frequency at night, while the patient is asleep and there is no increase of arterial tension. Like the old question, why is it that a vessel nearly filled with water into which a fish is introduced weighs just the same as it did before, the explanation is, that it does not. Cerebral hemorrhage does not occur with peculiar frequency during the night or while people are asleep. That was a theory which was asserted prematurely and it has been disproven a number of times. The statistics gathered by Dana and others show that cerebral hemorrhage does not occur with especial frequency at night. Thrombosis, on the other hand, occurs more frequently at night. I will not take up any more time by discussing the theory of neuron contraction, to which Dr. Pearce referred, as it would be a pure waste of cerebral activity. The theory of neuron contraction never had a single solitary basis upon which to rest.

DR. F. W. LANGDON, Cincinnati—I indorse what Dr. Patrick has said about the infrequency of cerebral hemorrhage at night. It has been my custom, in the course of my teaching, to refer to this as one of the differential points between cerebral hemorrhage and thrombosis. The latter occurs with diseased blood vessels and low blood pressure, while the hemorrhage occurs with weak blood vessels and high pressure. Gowers has also called attention to the fact that the state of the pulse, as indicating low blood pressure, points to thrombosis, while a high tension pulse—not necessarily a high rate—indicates hemorrhage.

I regard this as an exceedingly important point to take note of—both in diagnosis and treatment.

DR. JOHN PUNTON, Kansas City—Dr. Pearce, in his paper, failed to mention coma as an important symptom of cerebral hemorrhage. The longer the coma lasts, the less are the patient's chances of recovery. A study of this symptom has also an important bearing upon the surgical aspect of cerebral hemorrhage. The symptoms of cerebral hemorrhage vary considerably, depending upon the seat of the lesion; the diagnosis in some cases being very difficult, while in others quite easy. Another point to which I desire to call attention is that cerebral hemorrhage now occurs much earlier in life than formerly. The text-books teach that it is a disease of beyond middle life, usually coming on between 50 and 60. I am rather inclined to think that nowadays it not infrequently is seen during the active period of life. I can recall several cases in patients between the age of 30 and 35 years.

DR. W. A. JONES, Minneapolis—I had hoped that Dr. Pearce would enter more into detail regarding the differential diagnosis between the three conditions of cerebral hemorrhage, embolism and thrombosis. The most puzzling cases to me are those of diseased arteries, without hemorrhage. In many such I have been led to suspect hemorrhage, only to find a hardened, thick blood vessel or an obstructed blood vessel. I agree with Dr. Punton that cerebral hemorrhage is now observed more frequently early in life. Thrombosis, on the contrary, is more common in later life. The treatment of the three conditions is decidedly different, and for that reason we should endeavor to make the differential diagnosis.

DR. E. G. CARPENTER, Columbus—A number of cases of ingravescent hemorrhage have come under my observation during the past year, and I hoped to hear more on that subject. I have in mind particularly one case where the postmortem revealed a very interesting state of affairs: The patient was a young man, about 30, in excellent circumstances. He grew dissipated in his habits and in the course of a debauch he fell, receiving a severe injury of the head. He was brought to our institution, in Columbus, for inebriety, and kept under careful observation. He developed no particular symptoms at first, but on the tenth day after the receipt of his injury he died suddenly with all the characteristic symptoms of apoplexy. During the three days preceding his death it had been noticed that he was apathetic and drowsy. At the autopsy the entire right hemisphere was found covered with a large thick clot. This case illustrates the fact that in some instances of the ingravescent form of cerebral hemorrhage the tissues may become very tolerant to the presence of a foreign body, and the hemorrhage may grow to large dimensions without causing many or severe symptoms.

DR. PEARCE, in reply—Most of the cases of cerebral hemorrhage that have come under my observation have occurred

at night. In the general symptomatology in which I made the statement of the nocturnal attack prevailing, I included both thrombosis and embolism, which no one will doubt occur more frequently at night. As regards the neuronic theory, I agree with Dr. Patrick that it has not been proven. On the other hand, neither has it been disproven, and I am still inclined to cling to a theory which is fascinating and which explains, in an apparently reasonable manner, the mechanism of some normal and abnormal brain functions.

DANGEROUS HEMORRHAGE AFTER REMOVAL OF ENLARGED TONSILS AND ADENOIDS WITH THE REPORT OF A CASE.

A. C. GETCHELL, M.D.

WORCESTER, MASS.

April 30, 1901, at 5 p.m., I operated, at the Worcester City Hospital, upon Josephine H., a child of 5 years, removing large tonsils and an adenoid growth. The operation was done under ether anesthesia, which at no time was profound, but, on the other hand, just enough was given to keep her beyond the border line of consciousness. The tonsils were removed first and when the hemorrhage, which was rather profuse, but not alarming, had ceased the adenoid growth was removed. The tonsils were removed with a guillotine and the adenoid with forceps and curette. The bleeding promptly stopped, the recovery from the anesthesia was satisfactory and I left the hospital with a sense of relief that an operation that had caused me some anxiety was successfully completed.

At 7 o'clock I received an urgent call to come to the hospital. Much nausea had followed the ether, and previous to my coming the child had vomited a fluid resembling fresh blood at five different times, and about two ounces each time. She had been very thirsty and begged for ice constantly. She had also been very restless and tossed from one part of the bed to another, throwing her arms about and kicking off the bedcloths. The loss of blood, great thirst, restlessness, sighing respiration and failing pulse alarmed the attendants and I was called.

When I saw her bleeding had stopped. The throat had been examined, but no bleeding points were found, and I did not disturb her for further examination. She was greatly bleached, her lips were colorless, ears waxy and pulse very rapid and thready. To insure freedom from disturbing influences, she was put into a separate room under the care of a special nurse. At 8.30, from two to three ounces of dark-brown vomitus, mixed with much blood-clot, was emitted. This did not have the bright character of the former vomitus. The thirst was now intense. At 9, the pulse was 160, the restlessness had increased and delirium had developed, the hallucination being a glass of water on the floor. At 10 o'clock, no radial pulse could be felt, but, with the stethoscope, the heart-beats were found to be 192 per minute. The panting respiration was often interrupted by sighs and the child had lost all interest in her surroundings, although the restlessness was as marked as ever. At this time an enema was given, consisting of the following:

℞ Albumin water ..... ℥ss
Bovinine 3 3/4
Peptonized milk ..... ℥i
Pinch of salt.
Dover's powder ..... gr. iiss

This was retained.

At 11, the pulse was 180 and a faint flickering could be felt at the wrist. At midnight, however, the pulse had not continued to improve, it being 184, and it was decided to administer a salt solution subcutaneously. The solution was made of common salt and water by adding to a pint of water, made sterile by boiling, a dram of salt. This was reboiled to prevent the deposit of a sediment. The solution was then placed in a glass bottle, with a cotton stopper, and again sterilized in the oven. The apparatus for administration consisted of a glass cylinder holding eight ounces, drawn to a tube at its lower end, to which was attached a rubber tube; to the distal end of this was attached the hypodermic needle. To keep the fluid at the proper temperature the rubber tube was run through a glass tube around which was laid a water-bag filled with hot water. The fluid was forced into the tissues by gravity.

Six ounces of the salt solution were injected under the skin, inside the inferior angle of the scapula, and in half an hour it was entirely absorbed. The effect on the pulse was striking. At 1 a.m. it was plainly counted at the wrist, beating at 160. Besides this injection, Jacobi's mixture was started at midnight. This was given by mouth and consisted of

℞ Barley water ..... ℥iv
Brandy ..... ℥ii
White of one egg.
Salt and sugar.

It was given in doses of ℥ii every fifteen minutes, which meant a teaspoonful of brandy every two hours.

At 1 o'clock, twenty minims of elixir of chloralimid was given by mouth. At 2, the pulse was 160 and the nutrient enema was repeated. At 3, she vomited two ounces of a bright-red fluid mixed with blood-clots. The pulse was 160. Four and one half ounces of salt solution was injected below the other scapula. At 4, the pulse was 176. At 5, the pulse was 160, and the nutrient enema was repeated. This was followed by undisturbed sleep for twenty minutes. She made no objection to the enemata. At 6, the pulse was 160. At 7, it was 152. Ten and one-half ounces of salt solution was given, and at 8 o'clock the pulse had fallen to 140. At this time Jacobi's mixture, which had been given during the night every fifteen minutes, or as near that as possible, without awakening the child, was omitted, and brandy 20 minims, with sulphate of strychnia, 1/120 gr., was administered every two hours.

The child was kept in the hospital for about a week. She was fed with great care and very closely watched and made steady progress to recovery.

This patient I had not seen previous to the time set for the operation, the arrangements having been made over the telephone, by her father, who said a physician had seen the child and advised operation. She was a delicate-looking child, frail, with transparent skin and large eyes, and when I saw her I was quite taken aback, and for some minutes tried to find with myself some excuse for postponing or modifying the operation.

In such a case four courses suggest themselves: 1. Postpone operation and endeavor to get the child in better condition. 2. Remove the tonsils without anesthetic, paying no attention to the adenoid. 3. Remove the tonsils under an anesthetic and if the bleeding is slight and an adenoid is present remove it also. 4. Do the whole operation, even if a considerable amount of blood is lost in the tonsillotomy.

The last course, the one contrary to my usual practice and against my judgment, is the one I pursued.

I did it because the child was there and the parents expected the operation to be done, and, furthermore, because it was evident that the child needed the help that would come from the removal of very large tonsils. The adenoid was removed because I felt that the child might not be brought for a subsequent operation, and, therefore, this operation would be incomplete; to her disadvantage and my discredit.

However, I followed the operation through with much caution, both as to the use of the anesthetic and the removal of the growths. The hemorrhage from the tonsillotomies was profuse, but did not alarm me. I had seen much severer ones with no untoward after-effect and I did not feel that the risk was great; but I reckoned without my host.

The operative hemorrhage alone probably would not have produced alarming symptoms, neither would the poor recovery from ether, but she was of such a frail constitution that the weakness brought about by both these causes induced the post-operative hemorrhage, which was serious and bade fair to be fatal. One or two of the obstacles to recovery she might have overcome, but the three were too much for her, and it seems she surely would have died but for the prompt and skilful treatment she received. She had all the advantages of a well-equipped institution, and particularly of the services of a peculiarly capable house physician, Dr. W. W. McKibben, to whom I am indebted for many of these notes.

This experience confirms me in the conviction—that under the age of 5 years one should do the complete operation for removal of tonsils and adenoids with a great deal of caution, and where the tonsils are very large and the child is delicate and anemic, the complete operation under ether should not be attempted. The tonsils can and should be removed, but this can be done with no anesthesia or with a few whiffs of chloroform. The incompleteness of the operation should be explained to the parents and a future removal of the adenoid growth, under an anesthetic, should be considered and planned. Indeed, after the gain in health that usually follows the removal of the tonsils this becomes a safe proceeding.

In the consideration of this topic it would be proper to discuss the methods of operating that have been proposed to minimize hemorrhage. Some of them I have tried, others have promised such slight advantages that I have not tried them, and I will not take time for other enumeration.

For young children, I find no instrument is so generally useful as the tonsillotome for the tonsils, and the forceps, curette and finger-nail for the removal of adenoid growths. The choice is to be exercised not so much in the selection of instruments and methods, as in careful observation of the patient and the selection of proper time and conditions for the operation.

NOTES ON ONE HUNDRED AND FIFTY CASES OF SMALLPOX IN PRIVATE PRACTICE.

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There exists some diversity of opinion among members of our profession regarding the true nature of the disease which has been rather epidemic in some sections of our country during the last few years, and which has been termed by the various writers variola, modified smallpox, pseudo-smallpox, varicella, Cuban itch, elephant itch, Philippine rash, etc. It is true that the great majority of physicians recognize this disease as genuine smallpox; yet there are a number of careful observers who will not admit that such is the case, but who insist that this is a new unclassified disease; others again hold that it is an unusually severe type of chickenpox.

During the past twelve months I have had the opportunity to observe and treat 150 cases of this disease, as they occurred in private practice, principally among the negroes, in Central Louisiana, and I do not hesitate to state that these cases were genuine smallpox and could not be confounded with any other disease. I also saw a number of cases of variola in Northern Mexico three years ago, just before the disease became general throughout the United States, and these cases were identical in type with my recent ones.

Clinically, the course of my cases followed that laid down in the text-books to a large extent, with the exception that the secondary fever was low in most of the patients. It was, however, high in a number and altogether absent in a few of the extremely mild cases.

The onset was usually sudden, with high temperature, gastric disturbances and pains in the back. This last symptom proved to be quite a diagnostic point in my cases, as it would not yield to medication before the eruption appeared. The period of eruption followed also the typical course, papule, vesicle, pustule and crust, the vesicles becoming distinctly umbilicated in nearly every case, and the four stages occurring in cyclic order; not as in varicella where all stages of eruption may be found at one time. In 34 of my cases the eruption was confluent, no part of the body being exempt from attack. Here the pustules coalesced, forming large patches over the entire body, making a picture horrible to behold, and a condition almost unbearable for the poor sufferers, who can not be comfortable in any position.

During desquamation, which is prolonged here owing to the deepest structures of skin being involved, large casts are thrown off from the four extremities. This is a condition which never exists in varicella as far as I can learn and I have never heard of the eruption in varicella appearing upon the plantar surface of the feet and the palmar surface of the hands. There was delirium present in all these severe cases.

The course of the disease ranged from three to eight weeks, according to the intensity of eruption and the amount of constitutional disturbance accompanying the case. It is true that a number of the discrete cases suffered no further inconvenience than that occasioned by the amount of eruption present, and felt fairly at ease after eruption appeared. In all of the confluent and in a few of the discrete cases, the prostration was very marked, and as stated, the disease followed the typical orthodox course. It was impossible to determine by the prodomal symptoms whether a discrete or confluent case would follow, as in a number of instances the most severe prodromes would be followed by a mild eruption and vice versa. The disease seemed to have a selective preference for the negroes, probably on account of their careless personal hygiene, although a number of whites were also attacked.

One of my cases proved fatal and that was the only one with a hemorrhagic type of the disease I have seen. This was a young mulatto about 25 years old who had

suffered from arrhythmia and a cardiac neurosis for several years. He contracted smallpox a few days after arriving in our settlement, and died on the fourth morning after onset. In his case the hemorrhage took place in the papules before they were mature, the skin resembling that of erysipelas, being tense and shiny.

As long as our knowledge of the specific poison of smallpox is lacking, we can only direct our attention to the treatment of symptoms, and prophylaxis. In my cases I practiced isolation as much as possible, used the coal tar derivative, acetanilid, citrophen, thermol, etc., for the early symptoms with varying success. For the constitutional disturbances a morning saline and quinia and strychnia t. i. d., together with milk and soft-food diet were given. Calcium sulphid, which has been lately recommended as a specific, yielded very indifferent results, although faithfully used in about one-half of the cases. In fact, the only two cases of general furunculosis which developed after patients had recovered from the effects of the smallpox eruption occurred where this drug had been exhibited.

For the eruption various washes and ointments were applied, as carbolic acid and bichlorid solutions, boric acid, glycerin and ichthyol in different proportions. That which gave most satisfaction was a 5 per cent. lotion of liquor carbonis detergens in water; the skin surface was kept moist with it continually. This seemed to control the secondary fever and render the eruption less irritating.

The so-called characteristic odor of variola becomes very marked as pustulation advances, and is, of course, due to the necrotic processes in the skin. This unpleasant odor is masked by keeping body moistened with the detergent solution named or carbolic acid.

The one point which I wish to emphasize, however, and which I think of paramount importance, is the fact that not one of the cases in my district had been vaccinated, and that not one person who was successfully vaccinated contracted the disease. The significance of this statement will be realized when we consider that these people were very careless about exposing themselves, and would mingle daily with those who were already stricken, and when not actually watched, would spend some time visiting houses where probably five or six patients were in bed with smallpox. About 350 persons in all were vaccinated, and not a single one of these contracted the disease, although they were all exposed at different times.

In this connection one peculiarity was noticed which happened altogether too frequently to be due to mere chance. When one member of a family came down with smallpox I would immediately vaccinate the other members, one or two of whom would not react, and these would subsequently develop smallpox, but at a comparatively late period. Often in a family of five or six the father would take sick first. If the others had not already been vaccinated they would then submit to it—usually under protest—and within a week two or three would respond favorably, but one or two would fail to take. I would then revaccinate these as often as practicable, but would get no reaction. Now, after several weeks, and when the other members of the family had recovered, those who had failed to react to the several vaccinations would invariably come down with smallpox. I can not say whether the vaccinations in these instances retarded the outbreak of the disease, or whether the personal resistance against it was the factor.

A SATISFACTORY OPERATION FOR CERTAIN CASES OF RETROVERSION OF THE UTERUS.

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CHICAGO.

During the past year I have carried out the following procedure in a number of cases where operative interference has been deemed advisable for retroversion of the uterus.

The patient being in the Trendelenburg position, the abdomen is opened, adhesions are separated and other pathologic conditions, which may be present, attended to. The fundus of the uterus is elevated and pushed forward. A small hole is then made through the broad ligament on one side under the utero-ovarian ligament near the uterus. Through it a pair of forceps is passed from behind in order to grasp the round ligament about an inch from its uterine end. The latter is then pulled through the broad ligament in a double fold. It is carried across the back of the uterus a short distance above the utero-sacral ligaments and is then stitched in this

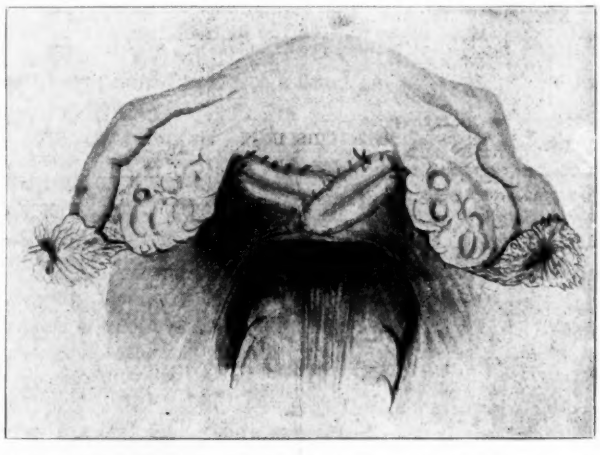

Diagram representing the round ligaments doubled up, drawn through the broad ligaments and stitched to the posterior surface of the uterus above the utero-sacral ligaments.

position with chromic catgut. A similar procedure is carried out on the other side, the second round ligament being stitched to the back of the uterus above or below the first one or crossing it. The amount of overlapping of the round ligaments depends upon their length and laxity.

Each ligament is also stitched to the edge of the hole in the broad ligament. As a result of this operation, the round ligaments are much shortened and through their new attachment to the posterior and lower part of the uterus, act both in elevating the uterus as a whole and in preventing it from returning to its retroverted position. The ovaries are also elevated. No raw surface is produced on which adhesions can form. No new ligament is formed to act as a possible cause of intestinal obstruction and of trouble in pregnancy and labor. The normal range of uterine movements is not materially altered. There is no possibility of any interference with pregnancy and labor.

The operation can be performed equally well by vaginal section. It seems, therefore, to me to be more advantageous than the other operative procedures commonly employed in the treatment of retroversion of the uterus.

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ARE ATOMS REAL ENTITIES?

At the opening of the 71st annual session of the British Association for the Advancement of Science, which met in Glasgow last September, President Rücker of the University of London devoted his address to an interesting discussion of the present atomic theory of the constitution of matter. Through the century just ended, a century of wonderful progress in chemical and physical knowledge, three grand conceptions have dominated the so-called physical sciences as distinct from the biological, 1, that matter is made up of separate particles—Dalton's fruitful and comprehensive theory of the existence of atoms; 2, that heat is due to movement among these particles, and 3, that there is an all-pervading subtle medium called ether. While these conceptions have grown in strength with each succeeding decade, they have not been blindly accepted without question. Especially during recent years have voices been raised against their universal acceptance, and the opinion has been expressed that the atomic theory and the theory of the existence of ether have served their purpose. It may be freely admitted that the view that matter is consituted by aggregations of separate particles has been useful in helping us to get some sort of understanding of the properties of matter in the past, but we are urged not to forget that these units are simply speculative and not objective and real. The terms "atoms" and "ether," useful and convenient fictions, answer the purpose of working drawings which though different from material reality yet help us to gain an insight into its arrangement and its properties, and to codify observed facts and laws. But the working model is probably very much unlike the real thing.

At the present time chemistry teaches the existence of about 100 different elemental forms of matter. Their weight-relationships to one another are, however, suggestively near multiples of the same number, and this resemblance in relative weight coincides with other resemblances, so that chemistry is pervaded by an indistinct belief that there is a common element which is the substratum of all kinds of matter. This dream that matter of all kinds will some day prove to be fundamentally the same has survived many shocks. Atmospheric air, carbonic dioxid and other mixtures and compounds may be broken up into several distinct, tangible entities, and the question is, can these gases be broken up further into molecules and atoms whose very motion we may be able to trace by actual, tangible proof? Of course, matter in bulk appears continuous, but how are we to explain the phenomena of diffusion and expansion and heat if all substances are perfectly uniform in all their parts? Air diffuses into water, and water penetrates into air, and the rights of way for the one through the other apparently exist. Rücker cites a recent classical experiment by Sir W. Roberts Austen, who placed pieces of gold and lead in contact at a temperature of 18 C. "After four years the gold had traveled into the lead to such an extent that not only were the two metals united, but, on analysis, appreciable quantities of the gold were detected even at a distance of more than 5 millimeters from the common surface, while within a distance of three-quarters of a millimeter from the surface gold had penetrated into the lead to the extent of 1 oz. 6 dwt. per ton." A simple, satisfactory explanation of such phenomena is found in the conception that matter consists of separate particles in motion, "which can penetrate into the spaces between the corresponding parts of surrounding bodies." There seems to be no limit to the expansion of matter, such as a gas, but it is certainly inconceivable that a continous material present in every part of a space can also be present in every part of a space a million times as great. Different kinds of light all travel at the same speed in interplanetary space, but at different rates in matter—a fact also explained by the coarse-grainedness of matter. Being forced to accept the particulate nature of matter what if anything do we know of the properties of these particles! What we do know of the properties of matter we have learned through the forces acting on our organism. These properties are of the aggregate of particles composing matter and as long as we are unable to detach a molecule or an atom we are not able to learn anything of its properties in isolation. Emerson has said in his essay on farming that "you can not detach an atom from its holdings, or strip off from it the electricity, gravitation, chemic affinity, or the relation to heat and light, and leave the atom bare," and such seems to be the case even to-day.

The question of the existence of molecules and atoms may be regarded as settled, the outstanding difficulties relating wholly to the nature and constitution of the granules. It has been said that every great advance in chemistry in the last 90 years finds its interpretation in Dalton's theory of atoms, and Rücker emphasizes strongly the fact that the atomic theory imparts a unity to all physical science. He likens a crowd of molecules to a fog and recounts the experiments of Wilson and J. J. Thomson in causing vapor to condense upon the molecules of highly rarefied gas until they become magnified into a visible mist. Fine dust facilitates greatly the production of fog, and these investigators show that electrified particles may act in a similar manner as nuclei for the condensation of vapor. Such electrified particles result from the breaking up of molecules into

ions. Indeed, the atomic theory has received strong support from the recent studies of electrolytic dissociation. J. J. Thomson's recent work on cathode-ray phenomena has led him to results that indicate even the divisibility of atoms into negatively electrified corpuscles.[1]

PROGNOSIS.

The soothsayers of old were looked upon with awe when by flight of birds, by falling star or by weird incantations they foretold the future. When to-day by examination of the tongue or pulse, by throwing a light into the eye so that he may inspect the eye-grounds, by listening to the working of the lung or heart, or by the study of secretions in the test-tube and under the microscope, the physician pronounces upon the fate of his patient, the same feeling of mystery comes over the listener, and the same unconscious homage is done the superior being who can peer into the future as was accorded the soothsayer. Much more credit is often given to a physician for a correct prognosis than for the acute diagnosis or skilled treatment that underlies his statement as to the course of the disease and its termination. He predicts that on a certain day the crisis will occur or the rash will disappear, or convulsions may take place. With wonder the laity see what was foretold come to pass and their amazement is great and the physician is credited with insight almost supernatural. Even though the doctor in his helpless ignorance may say that he can not tell what the result will be, that the patient may recover and live to a ripe old age or may die within twenty-four hours, he is accorded, perhaps unmerited, praise for his ability and the question is discussed as to how the doctor could tell such and such would happen.

The ability to make a prognosis depends on no mysterious or occult power, on no supernatural gift, but on study and experience. The natural history of disease, the effect of treatment, and an accurate knowledge of the existing conditions present in the given case must be known. This enables the physician to take a comprehensive view of the case and to hazard something more than a shrewd guess. A prognosis may be based largely upon an accurate knowledge of statistics, yet each case has to be considered by itself, the surroundings of the patient, the virulence of the disease process, the resisting power of the invalid, his individual peculiarities, and the condition of all the vital organs. It is here that the physician of broad education, of wide experience and of shrewd observation is often enabled to foretell the future to the upsetting of statistical tables and the amazement of the friends of the patient, and often of other physicians.

While the ability to make an accurate prognosis depends to a large extent upon actual experience, it must be remembered that this power is not entirely a natural gift, or a mysterious power granted to the few, but that it is just as much the result of reading, study, observation at the bedside and in the deadhouse, and of logical reasoning as is a scientific diagnosis or rational therapy.

1. See Journal, June 8, 1901, p. 1630.

VACCINATION AND SMALLPOX.

The *Popular Science Monthly* for October contains an article by Professor J. Nevins Hyde on the late or still-present smallpox epidemic in this country. He shows first how massing together of people, who thus lose their customary adaptation to environment, creates a peril and that this is especially accentuated when the assemblage is the form of camps and in time of war. War and pestilence are twin brothers, but they do not always appear side by side. More often pestilence follows war, and he illustrates this from our own history—the skin diseases so abundant after the Revolution, the cholera epidemic following the Mexican war, and the prevalence of typho-malarial fevers after the Civil war. Our late Spanish war is no exception; it has introduced into our country an epidemic of smallpox sweeping from the Eastern and Southern portion to the Pacific and involving all sorts and conditions of men. It came also in a form that has troubled the diagnostician and for this reason its range has been the more extended, the mildness of the malady in most cases leading to neglect of precautions and consequent spread of the contagion.

The cause of the mildness of the disease is explained by Hyde by the immunity conferred by vaccination through generations, an immunity conferred even in unvaccinated by inheritance, which he thinks must be admitted, not merely as a logical sequence of laboratory experiments, but from clinical facts. "Not the sins alone of the fathers, but some of the safeguards, are visited upon the children." The germs were brought from the Spanish hotbeds of smallpox by our vaccinated soldiers and were thus attenuated in virulence. It has been largely an epidemic of modified varioloid, but capable of producing in virgin soil the typical variola, as has been shown in many instances. Vaccination, however, while probably as near perfection as a preventive of smallpox as any human means can be, is still not absolutely perfect, and its failures show most plainly in epidemics when those ordinarily resistant to vaccinia become amenable and vaccination may even apparently succeed after or during the developed smallpox itself.

These exceptional facts, however, prove nothing against the rule, and the anti-vaccinationists overlook the signal victories over smallpox of which the general character of the present epidemic is itself an evidence. Hyde shows that, were it necessary to appeal to statistics at this late day to prove the value of vaccination, the experience of Porto Rico alone, where smallpox has been practically stamped out in two years, would be sufficient. She "bombarded us with a filth germ and in revenge we made her clean." His article concludes with the demand that "vaccination should be the seal on the passport of entrance to the public schools, to the voter's

booth, to the box of the juryman and to every position of duty, privilege, profit or honor in the gift of either the State or the Nation.

ASTONISHING IF TRUE.

In an editorial notice of an article by Kretzner on the pathology of the Jew, the *British Medical Journal* makes the following astonishing quotation, apparently from Benedikt: "At the present day among orthodox Jews every female is condemned from nativity till the menopause to an uninterrupted series of pregnancies, parturitions and lactations." This is important if true. We have heard much of the remarkable qualities of the Jewish race, but its precocity has never so impressed us before. It is so common for us to see in British publications remarks on our own deficiencies in the use of the English language that we can not think they do not know how to use it over there at its source, or we would believe the editor of our contemporary had made a mistake.

THE TEACHING OF PHYSICAL THERAPEUTICS.

The time is past when the treatment of disease is comprised in the administration of drugs, and to-day more than ever it is recognized that other forces of nature may be so employed as to render valuable therapeutic aid. If evidence of this fact were wanting it could be found in the circumstances that there are at present being published in English and in German, systems of therapeutics in which physical agents especially are discussed, such as heat, light, water, air, electricity, massage, rest, diet, etc. These are subjects, however, to which scant attention has been given in the past in the medical schools and by reason of their great importance it would seem that the time is now ripe for their inclusion in the medical curriculum.

YELLOW FEVER INVESTIGATION BY THE MARINE-HOSPITAL SERVICE.

In a letter to the Secretary of the Treasury, Surgeon General Wyman of the Marine-Hospital Service proposes a plan for the organization of a yellow fever institute under the auspices of his bureau. The members are to be the officers of the Marine-Hospital Service and others specially qualified, who may be invited to assist. The plan includes four sections, each having special topics for its consideration, and each section will be under the direction of one of the bureau medical officers who, with the surgeon general, the director of the hygienic laboratory and a secretary, will constitute a supervising body. There will be bulletins published from time to time as material is afforded by the investigations and "it is believed that the organization will meet with a degree of success warranting its existence." The prime motive for the proposed organization appears to be the demands by commercial interests for the modification of the quarantine laws. The necessity of the regulations heretofore in force against yellow fever infection has been questioned since the publication of the results of the studies of the army surgeons, and the bureau wishes to make a complete study of the subject. Medical men generally are inclined to accept the findings of Drs. Reed and Carroll and their co-workers as final, but there may be a few questions still open as regards the limits of usefulness of quarantine measures. We do not understand that the proposed studies are intended in any way to conflict with the work of other investigators, but rather to confirm them and to definitely establish the practical measures needed to exclude yellow fever from our shores. There is also a broad field of inquiry in regard to yellow fever that is yet to be satisfactorily worked. It is to be hoped that the proposed institute will occupy it profitably.

THE DISPENSARY EVIL.

The Pennsylvania State Medical Society proposes to attack the dispensary abuse in a new way. It asks the state legislature to pass a law requiring all persons seeking aid at dispensaries and other charitable institutions to record their names and addresses over their own signatures, or marks if unable to write, in a book kept for the purpose which shall be open for inspection, and to inflict a penalty upon those who fraudulently receive aid. The plan is certainly simple enough and if made universal by legislative act ought to be effective. Of course, everything would depend upon its faithful execution, and we fear that in the competition for clinical material there may be some chances of failure in this respect. Everything really depends upon the dispensary authorities and to check any possible laches on their part it should be the business of the medical societies on behalf of the profession to inspect the books and see that they do their duty. If this were done by some responsible agent and a sufficient penalty enforced, the charities could do better work and not be, as they sometimes now are, an imposition on the long-suffering general practitioners of our great centers of population. The medical colleges, especially those that might well be spared, would probably have some of their clinics diminished, but the profession as a whole would be better off. It is not the altruism of us as a whole, but the egoism of a few that keeps up these abuses.

LAXITY IN PENSION EXAMINERS.

The Commissioner of Pensions recently sent out to all examining pension boards a circular-letter calling attention to certain abuses. He sent his letters broadcast to avoid laying open to personal attacks those particular boards he had in mind. It appears that there has been in some quarters a serious carelessness, to say the least; twenty applications for example made at once from one section of the country were all certified as cases of heart disease. This aroused suspicion and special examinations by disinterested physicians ordered by the commissioner revealed no heart disease in any of the cases. Other similar experiences led to the dismissal of certain boards and the issuance of this letter. The public generally has a conviction that there is a vast amount of fraud in the pension business, and the publication of such facts as these confirm it. It seems that there are members of our profession who, through mistaken sentimentality or something else, will return a false report or acquiesce without personal attention to the cases in an erroneous diagnosis of another physician or even to

the mere statement of the claimant. It is not pleasant to have official evidence of such a fact, but there is no doubt such things have been done. The medical pension examiner who does not realize the fact that he is charged as a public officer to act honorably and honestly in his work, is, to use an expression that means much more than it says, no better than he should be. In short, he is aiding and abetting fraud. There has been either a laxity of professional honor and good morals in his case, or, what is nearly as bad, of competency to perform the work he swears to do.

VOLUNTEER HEALTH INSPECTORS.

The Chicago Health Department has utilized, during the past five years, the services of volunteer health inspectors whose duty was chiefly or largely to go out in the sections occupied by the poorer classes and give instructions as to hygienic needs. Their work was done especially in the hot midsummer months when the sanitary shortcomings are most serious in their effects, particularly to infants and young children. The results are best shown by the fact that the deaths of children under five years of age, since these inspections have been made, are 14,000 less in number than during the preceding five years. Over 10,000 homes have been inspected and many cases of contagious disease without medical attendance were found; a vast amount of insanitary conditions was corrected, largely by the householders themselves at the suggestion of the inspectors. So far as possible, anything like harsh police methods was avoided; the inspectors sought to win the confidence of the people, and generally with success. The inspections have been of special value during the past summer; they have insured better supplies of milk and ice, and have located the origin of many cases of typhoid and prevented other cases from the same. While the call for volunteers was instigated by a reduction of the working force of the department, it seems to have been readily responded to by the physicians of the city, and the results above stated are proofs that the efficiency of the city sanitary service has not been in any way impaired, but rather the contrary. To the physicians who volunteer it has the advantage of bringing them in contact with the people, of extending their acquaintance, and of serving to a certain extent as a clinical course in practical hygiene. What was at first an experiment has passed beyond the experimental stage and proven its value as a health-securing and life-saving procedure. The success in Chicago is a suggestion to other places that have as yet not adopted the plan.

CARELESS REPORTING.

As an example of careless reporting of experiments the following is worthy of mention. In the *British Medical Journal* of September 14 there appears an article giving some interesting observations on the penetration of the skin by the larva of the ankylostoma. The author says: "The experiment upon Dr. Looss is not convincing because he had, as I have said, previously suffered from the presence of ankylostoma in his intestines. He next experimented on a piece of skin removed from a fresh human corpse, and warmed to 99 F.; but this did not show any entry of embryos, possibly because the skin at once became too shriveled up. The next attempt was more successful. It was made upon the leg of a boy, aged 13 years, one hour before the limb was amputated. The leg was thoroughly washed with soap, nail brush, and water, then dried; and then one drop of water containing many larvæ was dropped on the skin and left to itself without being rubbed in. The drop spread out and dried up in ten minutes, and produced no redness of skin. The patient was not asked whether he felt a burning sensation. One hour after the drop came in contact with the leg the limb was amputated, and the suspected skin was at once removed from it and spread out with pins, gradually hardened in alcohol, and then embedded for section cutting, etc." There is nothing out of the way in this to a physician, because he would at once understand that there was some valid cause for the amputation and the opportunity was only utilized for an experiment that caused no suffering. But it should have been so stated. It is just such a report as would be taken up by our friends, the anti-vivisectionists, as evidence that this physician amputated the boy's leg to determine the pathologic question he was investigating. Even if they were aware that the amputation was for reasons not given, it would still probably come under their condemnation; but as it stands we expect to see it added to the list of horrible human vivisections in some future pamphlet attacking the inhuman doctors. One must be most particular how he writes in view of such possibilities.

POLITICS IN STATE INSTITUTIONS.

A beautiful example of the effects of political management of public charitable institutions was afforded recently at the Arkansas State Insane Hospital. The managing board passed a resolution ordering the superintendent to discharge all "alien" employes (non-voters?) within ninety days and fill their places with Arkansans. The attendants thereupon joined in signing a memorial to the Governor asking for assurances as to the security of their positions. He replied that it was in the discretion of the superintendent to keep them till he could fill their places as directed. The result of this was that they quit work in a body and the Governor was obliged to make a personal visit to the institution and give them the desired assurance before they would return to their duties. It is not surprising that, with the examples about them, the strike should come to be the recourse of hospital attendants, and the serious consequences that might follow are readily imaginable by anyone familiar with asylums. Under the political management existing in many of our state institutions this may come to be one of the possible abuses. When the ideals of the governing authorities are no higher than to make these public charities simply a portion of the political spoil system, the lower officials will also be likely to neglect the humanitarian aspects of their work and we may have strikes for any possible cause, such as the discharge for cause of a popular fellow attendant or the engagement or retention of an unpopular one. When the state officers and managers look on these institutions simply as a means for their own political advancement, the subordinates are not likely to be very altruistic

in their ideals or conduct. Hence, this gives rise to the scandals that are so frequent and that afford such welcome material for the sensational newspaper press. The medical profession owes it to itself to start a reform in this matter, to make politicians as well as soldiers respect the neutrality of hospitals. This is needed for our own credit, which has suffered and is still suffering from conditions as they have existed in the past and to a too great extent still exist. We can not begin the work of reform too soon.

LIMIT OSTEOPATHS TO WHAT THEY PROFESS.

Osteopathy, according to its founders and its advocates, is a system of treatment of disease without drugs, and they have had special laws passed in several states for their benefit embodying this idea. In these it is particularly specified that they are not authorized to administer drugs or to perform surgical operations. It has been urged in objection to these laws that they were only a subterfuge to evade the medical practice laws of the state and that the osteopaths would not confine themselves to the methods they profess to exclusively follow. That this is the case is revealed by the evidence in a recent suit in Denver, Colo., where a female professor of osteopathy sued for services rendered and it came out in the trial that she had not confined herself to osteopathic manipulations, but had prescribed medicines and administered treatment which only licensed physicians are entitled to give. The judge, while favoring osteopathy to the extent that he would not allow a non-suit on account of the plaintiff's lack of license, instructed the jury to find for the defendant if it believed she had been prescribing drugs. The case was decided for the defense and appealed by the plaintiff. Our confrères in Denver are, it is understood, taking up the matter vigorously, and a determined fight will be made to prevent this form of quackery from thriving on its illegitimate methods in the state. There is no doubt whatever that osteopathy laws are designed as entering wedges to open up a way to unlimited irregular practice. Consistency is not likely to be regarded by their advocates and beneficiaries; they care little as to the difference between their practice and their professions as long as they can successfully fool the public. While their use of drugs is practically self-stultification, it matters nothing to them provided the money comes in. The outcome of the fight in Colorado will be watched for with interest as the same matter will probably have to be fought over elsewhere. It is well to call the attention of the medical profession generally to the subject and to see that the osteopaths and others of their kind are not permitted to exceed their legal limitations. Every law that has been enacted for their benefit was passed through most positive assurances on their part that only manipulative procedures would be practiced by them in their treatment. Now let us be on guard to keep them to what they profess. If their treatment is limited to manipulation, osteopathy so-called will soon be a thing of the past, or exist only under its true designation, massage.

ENGLISH COMMENT ON THE M'KINLEY CASE.

While it has been a cause of satisfaction that the foreign newspapers, reflecting the sentiments of their readers, have spoken so highly of our late President, there is none the less gratification to us as medical men to read in the foreign medical journals so far received endorsements of the treatment of the case. The *Lancet* says:

> The favorable prognosis which was put forth at first was so far justified that in some cases recovery might have followed, but the issue hardly comes as a surprise. The injuries were terrible, the patient was no longer young, and the circumstances were such as to produce, even in a man of iron courage, the maximum of shock. If we may venture to criticise any portion of the treatment we feel inclined to suggest that the feeding by the mouth was somewhat in excess of that which is usually considered advisable. But while we say this we know that to the brilliant surgeons and experienced physicians around President McKinley's bed there may have been indications for the bolder treatment impossible to be disregarded. In short, on a careful review of the whole case we feel justified in saying that surgery did its best; the sad result is to be ascribed to the lack of vitality of the tissues themselves.

The *British Medical Journal's* comments do not contain even a hint at criticism, and the last part of the quotation below is certainly more pleasing reading than the harsh and uncalled-for criticism in an American medical weekly, referred to last week:

> A large bullet was discharged, with low velocity; instead of a clean wound the result of cleavage, there was a wide channel, with much surrounding bruising and laceration, and sloughing followed. There is no need to assign any influence to a supposed escape of pancreatic secretion or to a poisoned bullet. The mechanical conditions are ample to account for all the disturbance found. Much also seems to have been made in comment by the lay papers of the absence of healing described in the record of the necropsy. Such a lethargy on the part of wounds is, unfortunately, not an infrequent experience in abdominal surgery. In gastro-enterostomy for malignant disease of the pylorus, or in any short-circuiting operations performed in conditions of acute obstruction or of exhaustion resulting from malignant disease, complete absence of reparative power may be observed. One hears the pathologist say that the serous surfaces of the wound "fell apart" when examined, or that there was "no attempt at healing," and so forth. If the bruising of the stomach spread widely from the perforations made by the bullet, it is not idle to suppose that a local and coextensive "stunning," a complete cessation of activity, was also present. In such a condition healing is impossible.
>
> We can only repeat, though perhaps with greater emphasis, as more is now known of the facts, what was said last week as to the conduct of the case. In such a catastrophe operation affords the only hope of relief, and the earlier it is performed the greater the chance of success. Whether a resection of the bruised portion of the stomach would have affected the result we can not, in the absence of exact details, determine; but this we may with confidence assert, that American surgery ranks as high as that of any country in the world, and that in the medical men chosen to attend the late President, America was worthily represented. Success in such a case would have been a triumph, but defeat is not disgrace.

Medical News.

CALIFORNIA.

Street Cuspidors.—Dr. T. J. McCoy, Los Angeles, favors the placing of cuspidors on street corners and in office buildings, with sewer connections and constantly flushed with running water. This, he believes, would do away with a very potent source of tuberculosis infection.

Los Angeles County Hospital.—An additional tax levy has been ordered which will provide $150,000 for a new county hospital for Los Angeles. The institution is to consist of fifteen two-story wards with accommodations for nurses and attendants, fire-proof and equipped with all modern conveniences.

COLORADO.

Dr. **John W. O'Connor,** chief surgeon of the Denver and Rio Grande Railway, has been appointed chief surgeon of the Rio Grande Western Railway, vice Dr. Frederick J. Bancroft, resigned.

New Teller County Hospital.—The plans for a new county hospital, to be located at Cripple Creek, have been approved by the State Board of Charities and Corrections, and the building will be speedily erected. It is to cost $15,000.

GEORGIA.

Personal.—Dr. Everett Daniel, Boston, has located in Moultrie.——Dr. W. C. Kellogg, who has been in service at the National Soldiers' Home, Washington, D. C., has opened an office in Augusta, with Dr. Theodore E. Oertel.——Dr. Craig Barrow has returned from his studies in Germany and will practice in Savannah.

Memorial to Dr. Holt.—The Macon Medical Association, at its meeting, September 20, passed the following resolutions: "That this Association recognizes an irreparable loss in the death of Dr. William Flewellen Holt. That his high tone, dignified courtesy and beautiful character commend him to the whole profession as one of its worthiest members, whose example is deserving of closest imitation."

Whisky Prescriptions.—Four Forsyth physicians who are also proprietors of drug stores and have furnished whisky on prescription to patients, have been indicted by the grand jury for failing to register as dealers and to pay the state tax of $200. The first called was found guilty and fined $400. When the cases against the others were called, they, believing that the indictments against them were illegal, refused to appear in court and their bonds were forfeited. The physicians say that when they pay their State professional tax they have a right to prescribe any medicine they may deem necessary.

ILLINOIS.

St. Mary's Hospital, Quincy.—The new addition to St. Mary's Hospital, Quincy, was formally dedicated, September 17.

Smallpox at Quincy.—A new case of smallpox was discovered at Quincy, September 23, and the patient taken to the City Hospital.

The Board Enjoined.—Dr. James A. Marshall, Pontiac, who claims that the Board of Managers of the State Reformatory are endeavoring to remove him for political reasons, has secured an injunction restraining the board from removing him.

Consumptives' Hospital.—The cornerstone of St. Anne's Hospital, Austin, a home for consumptives, which is being erected by the Sisters of St. Elizabeth Hospital, will be laid October 20. The building will cost $150,000 and will occupy grounds of ten acres.

Personal.—Dr. Henry T. Schildroth, Belleville, has been appointed medical examiner to the Civil Service Commission and has gone to Washington, D. C.——Dr. Thomas J. O'Malley has moved from Joliet to Chicago.——Dr. Edgar Thompson, U. S. Navy, has been visiting friends in Lebanon. He has been on duty in the Orient for two years.——Dr. Louis Ostrom has returned to Rock Island from Kansas.——Dr. William Wood, Cairo, is seriously ill at his home, Woodside.——Dr. Paul Healy has purchased the practice and property of Dr. William K. Farley, Waterman.

Chicago.

The College of Physicians and Surgeons held its opening exercises, October 1, Dr. Sanger Brown delivering the address.

Bequest to Presbyterian Hospital.—By the will of the late Henry C. Durand, Lake Forest, $10,000 is bequeathed to the Presbyterian Hospital.

Personal.—Dr. Alexander Hugh Ferguson has returned from Europe.——Dr. Ludvig Hektoen returned, last week, from his summer of study in Europe.

The Woman's Medical School of Northwestern University held its thirty-second annual opening exercises, October 1. The annual address was given by Dr. Martha Foote Crowe.

Rush Medical College graduated a class of 16, September 30. The address was delivered by Dr. Ferdinand C. Hotz. On October 1 the fall term opened with a large increase in the number of students.

Scarlet fever is said to have taken a strong hold in Austin; 17 cases have been reported. In Rogers Park the epidemic is thought to be under control and the school which had been closed was opened this week.

Chicago Medical Society.—The first meeting of this Society after the summer vacation was held in the new meeting-place, Schiller Hall, October 2, President Fenger in the chair. Dr. N. S. Davis, Sr., delivered an address on "The Origin and Progress of the Chicago Medical Society," and Dr. W. A. Evans presented a paper on "Fat Necrosis."

Illinois Medical College held its annual commencement exercises, September 26, graduating a class of fourteen. Dr. Henry Sewall, of Denver, delivered the doctorate address on "The Physician's Ideal." The new college buildings at Halsted Street and Washington Boulevard will be ready for occupancy January 1, 1902. In the evening a banquet was given at the Auditorium Hotel, at which Dr. Seth S. Bishop was toastmaster.

Northwestern University Medical School.—At the opening exercises of this school, October 1, a handsome portrait of Dr. N. S. Davis, Sr., was unveiled. The presentation speech was made by Dr. Winfield S. Hall, who spoke of the connection of Dr. Davis with the school for many years, and the portrait was accepted on behalf of the faculty by Dr. John E. Owens. Dr. N. S. Davis, Jr., who now occupies the position as dean of the school, formerly held by his father, presided and introduced James H. Eckels, who delivered the address of the evening. Rev. Robert D. Sheppard, D.D., spoke on behalf of the university and told of the advantages the occupancy of the Tremont House property would give to the medical students. Dr. Arthur R. Edwards, secretary of the medical faculty, spoke briefly. The enrolment in the medical school is 450, which is 100 more than in former years.

Diminishing Infant Mortality.—A satisfactory disclosure of steadily diminishing infant mortality was made during the week just ended, through a compilation of the records for the summer months of 1899, 1900 and 1901, made by the Department of Health, in response to a request from an eastern sanitarium for infants and children, and the figures are as follows for the months of June, July and August in the respective years: In 1899, total deaths under 1 year of age, 1819; in 1900, total 1551; in 1901, total 1545. These figures give annual death rates per 1000 of population of 4.43, 3.65 and 3.51, respectively; and of total mortality at all ages, 28.4 per cent., 26.2 per cent. and 24.5 per cent., respectively. Thus, in the last three years the mortality of infants has diminished 13 per cent. in proportion to total mortality at all ages and 20 per cent. in proportion to actual population, and there were 274 fewer infant deaths this year out of a population of 1,758,000 than in 1899 out of a population of 1,639,000.

IOWA.

Personal.—Dr. Paul Gardner, West Union, has located in New Hampton.——Dr. Addison J. Beebe has moved from Greeley to Hudson.

Hospital Fair.—The women of the Ottumwa Hospital Association are to conduct a county fair, October 10 and 11, for the benefit of the hospital.

Communicable Diseases.—Diphtheria is reported to be on the increase at Rowley, where schools and churches have been closed. Smallpox has reappeared in Des Moines, and three light cases of the disease are reported from Red Oak.

KANSAS.

Dr. Thomas Blakeslee, Neodesha, has been removed from his position as deputy internal revenue collector for Southeastern Kansas.

Hospital for Negroes.—The management of Douglas Hospital and Training School, Kansas City, has arranged for the purchase of a site for a hospital and training school in that city for the negro people of Kansas City, Kas., and Kansas City, Mo. An effort is being made to raise a fund for the work and $1000 is now on hand to make the first payment.

To Test Medical Law.—A requisition has been issued by the Governor for Horace L. Wilson, who is now supposed to be in Oklahoma. Wilson is a physician who formerly practiced in Ellis. It is charged that since September 1, when the law went into effect, he has violated its provisions by practicing without a certificate from the State Board of Medical Registration and Examination. It is also claimed that he is not a graduate of a regular medical college or a practicing physician of seven years' standing in the state. By this trial the constitutionality of the medical law will doubtless be brought into question.

Board Serves Free.—From August on the members of the State Board of Medical Registration and Examination serve

without pay. The appropriation of $1200 passed by the last Legislature to pay salaries and expenses for the two years ending June 30, 1903, has been exhausted. After the first of September the board will hold meetings but once in three months and the members will pay their own expenses. The expenditures of the board were greater than expected on account of the great amount of work resulting from the issuance to physicians of certificates to practice in the state, as required by the new medical law.

MARYLAND.

Scarlet fever and diphtheria are prevailing in Montgomery County and several of the public schools have been closed in consequence.

Personal.—Dr. C. P. Gowman has moved from Odentown to Crumption.——Dr. Frank Dorsey, of Green Spring Valley, is in Boise City, Idaho.

Smallpox and Typhoid.—Maryland Health Officer Noble reports 16 cases of smallpox near Federalsburg, Caroline County, near the Deleware line and an epidemic of typhoid fever at Burrsville in the same county.

Baltimore.

The University of Maryland opened its year in the medical department without formal exercises.

Baltimore University School of Medicine opened September 30 with an introductory lecture by Dr. B. S. Hayden.

The Woman's Medical College opened its session October 1, with addresses on "The Medicine and Doctors of Juvenal," by Dr. Cordell, and on "The International Congress of Tuberculosis," by Dr. R. H. Thomas.

Maryland Medical College.—At the opening of Maryland Medical College Dr. William H. Pearce delivered the introductory address on "The Evolution of the Medical Profession." Baltimore Medical College began its year with an introductory address by Dr. S. K. Merrick, on September 26.

Care of the Insane.—The Board of Estimates approved the request of the Supervisors of City Charities for an additional $15,000 appropriation for the care of the insane in order to relieve the overcrowded condition of Bayview Hospital, making the total appropriation for the insane $119,400.

Infectious Disease Hospital.—A site has been selected for the infectious disease hospital on the Reisterstown Road, not far from Druid Hill Park. A tract of 10 acres has been bought for $20,000; $25,000 was appropriated some time ago for the purpose. The old quarantine grounds on the Patapsco opposite Fort McHenry, embracing 100 acres, will be sold. It is expected that $50,000 to $75,000 can be gotten for it which will help to put up a new building.

Personal.—Dr. Samuel C. Chew returned from Europe September 25.——Dr. James E. Willing has returned from a visit to the New England coast.——Dr. Marie E. Thalwitzer has returned from Europe.——Dr. John N. Mackenzie has returned from Narragansett Pier.——Dr. William Lee Howard has returned from his yachting excursion to the Azores.——Drs. Harvey Cushing and Mactier Warfield have returned from Europe.——Dr. W. G. MacCallum of Johns Hopkins Hospital has returned from his vacation.——Dr. Robert W. Johnson has returned from Europe.——Dr. F. M. Owens has been appointed resident physician at the City Hospital.——Dr. Melvin Rosenthal, who has recently returned from Europe, has been appointed associate professor of diseases of the skin at the College of Physicians and Surgeons.——Dr. Ira Remsen returned on September 23 to Baltimore after spending the summer in Maine and Massachusetts, but left again two days later to deliver the address at the dedication of the new laboratory of chemistry at Oberlin College, Ohio. While away Dr. Remsen finished another of his series of text-books on chemistry which is now ready for publication.

MICHIGAN.

Ann Arbor Medical Students, registered up to September 27, numbered 432, a decrease of 37 as compared with 1900. This falling-off is probably due to the changes in the requirements for admission.

Lying-in Hospitals.—The Detroit Board of Health has appointed Drs. Kennedy, Guy L. Kiefer and John L. Irwin a committee to investigate applications for licenses under the new law regulating lying-in hospitals.

No Spitting in Grand Rapids.—The Grand Rapids Board of Health has authorized signs to be made reading "No Spitting on the Sidewalks. By Order of the Board of Health," which are to be placed in prominent positions throughout the city.

Personal.—Dr. Murdock Kerr, health officer of Laurium, has resigned.——Dr. K. G. Brandes, Owosso, has moved to Quincy, Ill., where he has a hospital appointment.——Dr. James W. McMeekin, Saginaw, is recovering from a severe illness caused by septic infection.

August Mortality.—There were only 2672 deaths returned to the Secretary of State for the month of August, corresponding to an annual death rate of 13.1 per 1000. This is an unusually low mortality for August, the number of deaths returned being nearly 300 less than for August, 1900.

MINNESOTA.

St. Luke's Hospital.—The new St. Luke's Hospital, Duluth, is so well under way that it is now expected that it will be completed by Feb. 1, 1902.

Smallpox is spreading among the Indians in the state. It has appeared in virulent form on the Fond du Lac reservation, but has been apparently checked on the Mille Lacs reservation.

Diphtheria in virulent form has broken out at Friber, Otter Tail County, where six cases are reported. The disease is unusually prevalent in Minneapolis and the health commissioner is using his utmost efforts to enforce quarantine.

Personal.—Dr. Elbert E. Persons, U. S. Army, has been ordered to Fort Snelling to relieve Contract Surgeon Herbert J. Harris, who has been transferred to the Department of Cuba.——Dr. Louis B. Rennick, Glenwood, has moved to Lidgerwood, N. Dak.——Dr. James W. Robertson, Litchfield, has been appointed pension examining surgeon.

The Medical Department of the University of Minnesota held its opening exercises, September 23, in the old medical building, Minneapolis. Addresses were delivered by President Northrop, Dr. Parks Ritchie, Dr. Jacob E. Schadle and the Governor of the state. Dr. Schadle in his address reviewed the history of medicine from 500 B. C. to the present time.

NEW JERSEY.

Overbrook Asylum.—The new wing at Overbrook Asylum is now ready and 80 female patients have been transferred to their new quarters.

Did Not Report Disease.—An Orange and a Jersey City physician have been arraigned for failing to report cases of contagious disease, as required by law.

Personal.—Dr. Charles Waters has opened an office in Trenton.——Dr. Henry R. Baldwin, New Brunswick, was stricken with paralysis at Trenton, September 26.

Authority of Board of Medical Examiners.—A Newark applicant for a license to practice medicine, who was refused examination by the Examining Board on the ground that he had been convicted of malpractice, proposes to test the legality of the medical act. His attorney claimed that as his client had pursued a medical course in a reputable medical institution and had a certificate to that effect, had deposited the required fee and complied with all other legal preliminary requirements, the Board had exceeded its authority in refusing to allow him to take the Examination. He holds that the Board's province is to pass on the medical skill of applicants and not on their moral fitness. The Board, however, did not change its ruling.

NEW YORK.

Mystery Solved.—The mysterious disappearance of Dr. Charles W. Hoyt, Corning, has been cleared up by the finding of his body in Lake Erie, near Geneva, Ohio.

Personal.—Dr. Harold L. Baldwin, Syracuse, has entered into partnership with Dr. Henry C. Baum.——Upon the expiration of his term of office as Assemblyman, Dr. Nelson H. Henry, New York City, is to become Adjutant-General of this state.

School Children Examined.—The bureau of health of Syracuse has decided that the pupils of the public schools must be examined as to the condition of their health, twice a month. The principal object is to guard against contagious disease, but the physicians will also try to detect and remedy other physical defects. Defects in eyesight especially will be remedied as far as possible.

Sues State Hospital.—Dr. Marie L. Benoit, New York City, has brought suit against the board of managers of the New York State Custodial Asylum for Feeble-Minded Women

Newark, and seeks to obtain reinstatement on the civil service list and salary, with value of maintenance as provided by law, for the months of July, August and September of this year. The plaintiff accuses the managers and the superintendent of breaking their contract with her, the terms of which, she claims, guaranteed her the position of resident physician at the institution until October 1. She claims her removal was ordered because she criticised the quality of the food supplied to the patients.

Albany Medical College opened for the session of 1901-1902 on September 24. Dr. Howard Van Rensselaer delivered the opening address. The following changes in faculty have been made: Dr. Willis G. Tucker, successor to the late Dr. Maurice Perkins, as professor of chemical philosophy and organic chemistry. Dr. Howard Van Rensselaer will be professor of materia medica, vice Dr. John V. Hennessy, resigned. The following appointments have been made as clinical professors: Dr. Leo Haendel Neuman, theory and practice of medicine and gastro-enteric diseases; Dr. Jesse Montgomery Mosher, insanity, neurology and electro-therapeutics; lecturers: Dr. William Olin Stillman, history of medicine; Dr. Harry Judson Lipes, obstetrics; Dr. Charles Harper Richardson, minor surgery; Dr. Arthur Wells Elting, surgical pathology; Dr. George Emory Lochner, gynecology, and Dr. Arthur Turner Laird, clinical microscopy.

Buffalo.

Professor Czerny, Heidelberg, Germany, has been a guest of Dr. Roswell Park.

Dr. C. A. Haman, Cleveland, read a paper on "Spasmodic Torticollis and Its Surgical Treatment" before the Surgical Section of the Buffalo Academy of Medicine, Tuesday, October 1, 1901.

The Experts Who Examined Czolgosz as to his sanity will be allowed fees by Erie County, at the rate of, approximately, $100 per examination. It will cost Erie County in the neighborhood of $2000 for their services.

The Medical Department of the University of Buffalo opened its fifty-sixth annual session, Sept. 30, 1901. Dr. F. C. Busch, professor of physiology, delivered the address of welcome, a review of the advances in medicine and surgery.

Emergency Hospital.—The throng of sightseers which daily has besieged the emergency hospital at the Pan-American Exposition since the wounded President was treated there, has become so great that the hospital staff found it almost impossible to perform the regular duties. A sign has been displayed that non-professional visitors are requested not to take up the time or attention of the hospital staff. Up to the time of the shooting the hospital was looked upon as a sort of exhibit and was open to the public at all hours of the day.

OHIO.

Dr. Lansing's Estate.—The estate of the late Dr. R. H. Lansing, Chillicothe, is valued at from $35,000 to $40,000.

Diphtheria is prevalent in Coshocton. Two Zanesville physicians have been arrested on the charge of failure to report cases of the disease.

Toledo **Medical College** held its twenty-first annual opening exercises, September 26. Addresses were made by Rev. Dr. Belsey, Dr. John S. Pyle and other members of the faculty.

The **College of Physicians and Surgeons,** Cleveland, for its forty-first term, opened September 18, without formal exercises. Dr. Charles B. Parker made a short address of welcome to the students.

Osteopath Arrested.—On complaint of Health Officer Beardsley, of Findlay, an osteopath of that place was arrested, September 24, charged with practicing medicine and with prescribing drugs for the cure of physical ailments, without complying with the state laws governing physicians.

Personal.—Dr. John F. Hesse had a second attack of paralysis at his office in Cincinnati, September 16, and is in a critical condition.——Dr. John E. Brown, Columbus, has returned from a three months' trip to Europe.——Dr. Edward Vail, Newark, the oldest practitioner in Licking County, was stricken with paralysis, September 21.

PENNSYLVANIA.

Measles is epidemic in South Williamsport.

A correspondence school of personal magnetism, magnetic healing and hypnotism is the latest Philadelphia novelty.

Woman's Medical College, Philadelphia, opened its fifty-second annual session, September 25. The address was delivered by Dr. Caroline M. Burnell.

A reception was tendered by the trustees and the faculty of the Medico-Chirurgical College, Philadelphia, to the members of the State Medical Society, guests and visiting ladies, at the college building, September 26, from 5 to 7 p. m.

Protest Against Isolation Hospital.—As vigorous protests were made to the mayor of Philadelphia against the establishment of an emergency hospital for contagious diseases in the twenty-eighth ward, he has directed that all work be stopped and to abandon the proposed location. He has ordered temporary pavilions to be constructed within the hospital enclosure.

Personal.—Dr. A. E. Stoits, Philadelphia, has located in Williamsburg.——Dr. J. A. Trexler, Macungie, has purchased the practice of Dr. Wagner, of Pikesville, and will locate in that place.——Dr. Edwin R. Rasely, Vanderbilt, has moved to Uniontown. He is to be resident physician for the Rainey Coke Company.——Dr. Judson Daland has returned to Philadelphia after his summer vacation, which was spent in European travel. ——Drs. Thomas C. Buchanan, Honeybrook, and W. E. Fisher, have opened offices in Reading.

TEXAS.

Smallpox is reported to be epidemic in Ellis County.

Southern Pacific Hospital.—A hospital building is to be erected at El Paso by the Southern Pacific Railroad Company, which will accommodate fifty patients.

Fort Worth University Medical Department opened October 1, with appropriate exercises. The only notable change in the faculty is in the chair of anatomy, which is now held by Dr. Gardiner, who succeeds Dr. William R. Thompson, resigned.

Mosquito Warfare.—Galveston has arranged for a large supply of crude oil from the Beaumont wells, which will be sprinkled on all stagnant pools and gutters in the city and will be given to owners of open cisterns for use in destroying mosquitoes.

Personal.—Dr. John D. McMillan has sold his residence in Biardstown to Dr. Jefferson D. Skidmore, and will move to Paris.——Dr. E. C. Barham, Duffon, has moved to Hico.——Dr. T. J. Hubbert, Hico, has moved to Fort Worth.——Dr. E. D. Capps, Fort Worth, who has been in Europe the greater part of the summer, has returned to New York and will soon return to Texas.

WISCONSIN.

Milwaukee Medical College opened for its eighth annual session, September 17. Dr. John J. McGovern is the new professor of anatomy. More than 500 students have matriculated.

Smallpox has been reported at North Fond du Lac, imported from Colby, and is among the Winnebago Indians, at Brockway, where 100 cases are said to exist. It has also been reported at Sheboygan, said to have been brought from Sturgeon Bay, and at Newton.

To Enforce Smallpox Law.—Dr. G. O. Switzer, Stanley, has been appointed special medical inspector and agent of the State Board of Health for Chippewa and Taylor counties. Dr. Frank B. Hicks, city health officer of Washburn, has been named as the special representative of the State Board of Health to look after the work of suppressing smallpox in Bayfield county.

Personal.—Dr. L. W. Zochert, Hingham, has settled in Fond du Lac.——Dr. J. Johnson Heeren, Marinette, is located on a fruit ranch near Mimbres, N. M., and is regaining his health and strength.——Dr. Cora A. Turner-Saxe, Delavan, has sold her practice to Dr. Rebecca Rhodes, and will go to Everett, Wash., early in October.——Dr. Albert G. Jenner, Milwaukee, sailed September 19 for Europe on the *Spartan Prince*.——Dr. George H. McCallister, Elkhorn, has sold his practice to Dr. T. H. McCarthy, Stoughton.

GENERAL.

Surgeon General George M. Sternberg, U. S. A., arrived at San Francisco, October 1, from Manila.

Gift to Manila Hospital.—Mr. Whitelaw Reid, New York, has made a second gift of $5000 to the Woman's Hospital, Manila.

Plague at Rio Janeiro.—President Roca has signed a decree declaring that the port of Rio Janeiro is infected with the plague.

Examination for Physicians for Indian Service.—An examination will be held on October 22, for the position of physician in the Indian service, at White Earth Agency, Minnesota, at a salary of $900 a year.

American Hospital in Paris.—The project of erecting an American hospital in a suburb of Paris, which was about to be abandoned, has been revived by a donation from the Duchess of Marlborough of $10,000, and by the promise of a similar amount from her father, Mr. W. K. Vanderbilt.

Records of International Congress of Medicine.—The General Secretary of the 13th International Congress announces that the general volume and the seventeen records of the sections are ready for delivery. Any member who has not received the volumes and is entitled to them is requested to address the Editors of the Congress, Mrt. Masson et Cie., 120 Boulevard Saint Germain, Paris, not later than December 15, 1901.

Egypt's International Medical Congress.—An International Congress of Medicine will be held under the patronage of the Khedive of Egypt, at Cairo, in December, 1902. It will be the first great gathering of scientific men ever held in an oriental country. The subjects to be considered more particularly will be the diseases that come from the East, cholera and the bubonic plague, as well as forms of dysentery and ophthalmia prevalent in eastern lands. Among the medical men who are promoting the congress are Abbate Pasha, Tomanos Pasha, physician to the khedive; Ibrahim Pasha Hassan, dean of the Cairo Medical School; Mol Eloui Bey, the ophthalmologist, and the chief Egyptian physicians, native and foreign. Dr. Varonoff is secretary general of the committee in charge of arrangements.

An examination for colored doctors will be held October 29 and 30 by the United States Civil Service Commission, at Washington, D. C., for the position of assistant surgeon of the Freedman's Hospital. The examination is open to all citizens of the United States, and full information can be obtained by applying to the Commission Board. No one under 20 years of age is eligible. The subjects upon which the questions will be asked are: Letter writing, anatomy and physiology, surgery and surgical pathology, chemistry, materia medica, therapeutics, bacteriology and hygiene, theory and practice of medicine and general pathology, obstetrics and gynecology. The Freedman's Hospital is an institution established at Washington, D. C., for the free care and treatment of colored patients. It is understood that it is the custom of the department to appoint only colored people to positions. From the number of those who successfully pass the coming examinations, appointments will be made. The position carries a salary of $1000 to $1500 a year.

CANADA.

Asylum Staff Changes.—Dr. Harvey Clare, assistant physician at the Asylum for Idiots, Orillia, has been promoted to the position of assistant physician at the Asylum for the Insane, Brockville, to succeed Dr. Wilson, who has been transferred to the London Asylum.

Dowieite Convicted.—On the 26th inst. Mr. Justice Walker, of the British Columbia courts, found a member of the "christian catholic church in zion" guilty of manslaughter, on the charge of failing to provide proper medical attention for his two children who died from diphtheria.

Death of a Centenarian.—In the village of Troy, which is situated a short distance from the city of Hamilton, Ontario, there died the other day a man who had reached a ripe old age, Adam Misener, aged 103 years and seven months. There is no doubt about the authenticity of this man's great age. He was well known to the writer.

Annual Report: Provincial Board of Health, Ontario.—The nineteenth annual report of the Department of Public Health in Ontario has just been issued, and it deals with the year 1900. In a population set down at 2,302,705, there occurred 25,382 deaths, or 11.9 per 1000, the average population reporting being 93 per cent. The deaths occurring from consumption are set down at 2360.

Trinity Medical College Opening.—On the afternoon of the 25th inst. the opening lecture of the session of 1901-1902 was delivered by Professor Charles Sheard. Dr. Brennan, an old graduate, who was President Kruger's physician when the South African war broke out, but who immediately left him and joined the British forces, was present, and was welcomed by a number of old friends.

Quebec Medical Council.—At a meeting of the Board of Governors of the College of Physicians and Surgeons of Quebec, held on the afternoon of September 25, the following officers were elected: President, Dr. Lachapelle, Montreal; vice-presidents, Dr. Vallee, Quebec, and Dr. Craik, Montreal; registrar, Dr. Marsolais; treasurer, Dr. Jobin, Quebec; secretaries, Dr. McDonald, Montreal and Dr. Paquin, Quebec.

Something About the Birth Rate in Canada.—After all, it would appear that the largest families are not in the province of Quebec, but in Prince Edward Island, where five persons and four-fifths of a person constitute a family, according to the Toronto *Globe*. The Quebec family is said to consist of five and one-half; New Brunswick has the same record, while Nova Scotia has one-tenth of a person less. In Manitoba, British Columbia and the Territories the family is less than five.

The Outbreak of Anthrax in the Northwest.—Much alarm is experienced among cattlemen in Toronto and Montreal lest anthrax, which has been so widely prevalent in the Canadian Northwest, be introduced into Ontario, generally, one or two districts now being already infected. Over 4000 sheep belonging to one company in the Northwest are dead and considerable loss among cattle and horses is also reported. The disease was brought into that part of the Dominion by Australian sheep-shearers. It is understood that owing to the general quarantine immediately set on foot the outbreak is being held in check.

Smallpox.—Smallpox has reappeared in the Island of Manitoulin, but in a very mild form. The Provincial Health Department has ordered that all cases and suspects be quarantined and that vaccination be generally enforced. The outbreak at Ottawa begins to assume a serious aspect. It is understood that Dr. Robillard, who has been health officer of the city for over twenty years, has resigned on account of being hampered and criticised in his work. An employe of the census bureau has contracted the disease and Dr. Montizambert, the Director-General, has had to vaccinate the entire staff of that department. Toronto has been declared free of the disease by the medical health officer.

FOREIGN.

Hospital at Port Arthur.—The Russian government is erecting a sanitarium at Port Arthur at an expense of 200,000 roubles.

Dresden school children show, as the results of the medical inspection of all school children, that 50 per cent. deviate from the normal standard.

Women Excluded.—The professors of anatomy, chemistry and physics at the University of Königsberg have excluded women students from their lectures.

The German Balneologic Association has published an appeal for subscriptions to erect a memorial in honor of H. Brehmer, the father of the tuberculosis sanatorium.

International Exposition of Photography.—Dr. A. E. Stein, Berlin, assistant at Bergmann's clinic, obtained the prize for medico-scientific photography at the recent exposition in Weimar.

Prize Founded in Honor of Tokarski.—The patients and admirers of the recently deceased Moscow professor, A. Tokarski, are collecting subscriptions to establish a quadrennial prize to bear his name, to be awarded for the best work on the application of hypnotism to the treatment of nervous diseases.

Country Homes for the Convalescents of the Paris Hospitals.—The Paris authorities are seriously considering the proposition of sending convalescents dismissed from the hospitals to board in families in the country. The expense is less than to establish sanitariums, while the physical and moral advantages are considered superior.

Jockey Hospitals.—It is not generally known that Newmarket, England, and Chantilly, France, have each a hospital for jockeys only, where those injured in the races or suffering from any except contagious diseases are admitted and cared for in a princely manner. The *Gaz. Méd. de Paris* states that the Chantilly hospital has two permanent inmates, pensioned and retired on account of age.

Free Post-Graduate Medical Courses in Berlin.—The central committee organized to "promote the perfecting of the art of medicine in Prussia," by holding post-graduate courses, reports that 1140 physicians have made application in Berlin

this year, against 797 in 1900. There are now nineteen courses, and a series of conferences on military surgery and medicine, and also on industrial accidents from the medico-legal point of view.

Hirschberg's Library.—The famous ophthalmologist of Berlin, J. Hirschberg, has compiled a catalogue of the works in his library on his specialty, with a brief descriptive outline of the contents. It forms a volume of 434 pages, and as the collection is destined for the library of the Berlin Medical Society, ophthalmologists are rejoicing. The *Deutsche Med. Wochenschrift* remarks that the Hirschberg ophthalmologic collection is the most extensive and complete in the world.

Virchow's Birthday Festivities.—The official celebration commences on the day before the birthday, October 12, with the inspection of the newly-installed collections of the Pathological Museum, to which Virchow himself issues the invitation. At six p. m. a banquet is tendered to Virchow and his family, the delegates from abroad and his most intimate friends. It will be held in the Prussian Abgeordnetenhaus or House of Deputies, and afterwards the party will adjourn to the assembly hall, where the delegates and others will present their greetings and contributions to the famous Virchow Fund, with a souvenir pamphlet containing the names of the contributors. The city of Berlin has voted to contribute 100,000 marks—about $25,000—to the fund. The medical societies of Moscow are to hold a joint session on that day in honor of Virchow, and, besides sending a deputation to Berlin, have commenced collecting funds to establish a Virchow scholarship at the university. The Paris Society of Anthropology sends a gold medal in his honor.

French War on Consumption.—Since the congress in London, all the individual leagues founded to combat tuberculosis have consolidated into a single gigantic "union for struggle against consumption." Delegates representing all the mutual aid and mutual insurance societies met in the hall of the Sorbonne and agreed to contribute a fund of $10,000 yearly for the support of 100 beds in the hospitals of each large city in France, besides supporting 300 free consulting-rooms in public sanatoriums throughout the country for the coming year. Moreover, the members of the new union purpose publishing a periodical devoted solely to fighting the disease, which annually destroys so many lives in France. This periodical will be edited principally by Dr. Calmitte, head of the Pasteur Institute at Lille. The organizers of the present movement, which is the largest yet established, hope that a similar move will be made in the United States and Great Britain. A beginning in this line has already been made in Germany.

LONDON LETTER.

Tuberculosis in Animals.

The Local Government Board has issued to the Borough Councils a letter dealing with the tuberculosis question in which it is pointed out that the views of Professor Koch have not received the assent of scientific men and that pending the Report of the Royal Commission there should be no relaxation in the measures dealing with milk from tuberculous cows and with tuberculous meat. As the action of the local authorities is not uniform the Board calls attention to the report of the Royal Commission on Tuberculosis held in 1898 as to the degree of tuberculous disease which should cause a carcass, or a part thereof, to be seized. This commission was of opinion that the entire carcass and all the organs of cattle might be seized, 1, when there is miliary tuberculosis of both lungs; 2, when tubercular lesions are present on the pleura and peritoneum; 3, when tubercular lesions are present in the muscular system or in the lymphatic glands embedded in or between the muscles; and that the carcass if otherwise healthy should not be condemned, but every part containing lesions destroyed when the lesions are confined to the lungs and thoracic lymphatic glands, when the lesions are confined to the liver, when the lesions are confined to the pharyngeal lymphatic glands, and when the lesions are confined to any combination of the foregoing, but are collectively small in extent. In pigs, in view of the greater tendency of tuberculosis to generalization, the Commission considered that tubercular deposits in any degree should involve seizure of the whole carcass and of the organs. In respect of foreign dead meat, seizure was recommended in every case in which the pleura had been "stripped." The Local Government Board now strongly urge the Borough Councils to enforce these regulations.

Major Ross' Anti-Malarial Campaign.

A letter has been received by the Chairman of the Liverpool School of Tropical Medicine from Major Ronald Ross, giving information of the results of his visit to the Gold Coast and of the work of the fifth expedition of the school. He first refers to the admirable measures of Sir William Macgregor at Lagos, which have been already described in THE JOURNAL. At Accra, arrangements have been made to improve the condition of the Europeans by buying up several poor locations planted in their midst. An admirable plan has been formed for laying out the town of Sekondi in accordance with scientific requirements by buying out the poor locations on the foreshore, extending the European quarters along the bluff to the east, and placing the native town apart—behind the railway. Major Ross informed the governor that he did not think that the housing question would in itself put a stop to the fever and that the measures adopted at Freetown and Lagos should be extended as soon as possible, and that considering the importance of the matter the Liverpool School of Tropical Medicine would consider the advisability of sending a delegate to direct operations. At Sierra Leone he found a gang of men employed in clearing the larvæ of mosquitoes out of the houses. In 34 days they had cleared 2473 houses and removed 358 cartloads of empty tins, broken bottles and such like in Freetown. It is calculated that one in three empty tins is a breeding-place for mosquitoes. A serious blow has, therefore, been struck at the prevalence of the culex mosquito in the town. Major Ross calculates that an annual expenditure of only £100 would keep the town free from mosquitoes. Already their numbers are greatly reduced. These culex mosquitoes, besides causing annoyance, carry the germs of yellow fever, elephantiasis, and other diseases. Operations against the anopheles mosquito, which breeds in puddles, are also being pushed. Hollows in the ground are everywhere being drained or filled with earth. Others are being filled with the empty bottles and tins found in the houses. Many of the worst streets, which were practically marshes, have been reclaimed. The unhealthfulness of the Gold Coast, Major Ross believes, has been much exaggerated. True, there is a considerable amount of malaria among Europeans, but there is little or no typhoid. Everywhere men are met who have lived on the coast for years in good health. It is the young, reckless, improvident and sometimes intemperate newcomer who generally falls a victim to disease. If a man contracts malarial fever now in 9 cases out of 10 it is his own fault. The scrupulous use of a mosquito net is necessary.

Lunacy in 1900.

The report of the Commissioners in Lunacy for 1900 has just been issued. The total number of lunatics of whom they had notice in 1900 was 107,944—an increase of 1333 for the year as against increases of 1525 in 1899 and 3114 in 1898. As the average annual increase for the last five years has been 2300, the increase for 1900 must be considered small.

The Gelatin Treatment of Aortic Aneurism: Fatal Tetanus Produced.

At Guy's Hospital a very unfortunate result has followed in the case of two patients undergoing this treatment. Three patients—a carter, aged 37, an engineer's laborer, aged 33, and a third one—underwent the gelatin treatment about the same time. The latter was discharged, according to the opinion expressed at the inquest, thoroughly cured. But the two former have died from tetanus. What the weak links in the chain of antiseptic precautions were is not known. It is difficult to believe that the spores could have been in the original gelatin and resisted the prolonged sterilizing processes to which it was subjected.

The Outbreak of Smallpox in London.

The outbreak of smallpox, which has been previously described in THE JOURNAL, appears to be on the decline. In eight weeks, ending Sept. 7, 135 cases were admitted to the hospital, and of these, 113 were admitted during the last three weeks of that period. For the week ending August 24 there were 30 cases; August 31, 52 cases, and September 7, 31. The cases have not come from one quarter of London, but from all over the metropolis. A source of anxiety is the large number of unvaccinated children in London, the result of the recent vaccination act which practically abolishes compulsion. It is estimated that a third of the children who attend elementary schools are unvaccinated. The difficulty of diagnosis which the ordinary physician experiences has been previously mentioned in THE JOURNAL. Vaccination acts in two ways in producing

this difficulty—by rendering cases so rare that most doctors have never seen the disease and by modifying the eruption. Suspected cases are first removed to shelters where they remain under observation until the diagnosis is definite; in case the patients are suffering from smallpox they are then removed to hospital ships in the Thames, which are specially reserved for the disease.

Correspondence.

Aim of Medical Education, and Its Relation to Research Work by Medical Students.

CHICAGO, Sept. 23, 1901.

To the Editor:—The editorial in your issue of Sept. 21st, commenting upon my paper on "The Aim of Medical Education, and Its Relation to Research Work by Medical Students," which appeared in the same issue, shows such a lack of understanding of the points of the paper that I beg the privilege of reply.

The writer of the editorial has distinctly misunderstood my use of the expression: "Original research has for its object the determining of new truths of a more or less general character." I do not blame him for this, as the language is imperfect, and I felt it at the time of writing. The language would have been better had I omitted the limiting phrase, "of a more or less general character." What I had in mind, however, which gave rise to the phrase was this: Every truth in one of the basic sciences which bears upon "clinicism," has in the latter numerous applications; it is, therefore, to the latter "more or less general." The point, however, is not important, and to discuss it further would lead to a mere tangle of words, something I wish to avoid. To further clear the way for true discussion, I grant at once that all knowledge is relative and that speculations as to the "absolute" have no place here. Furthermore, I can not see how anything I said could have led to his very true, but wholly irrelevant statement: "Only occasionally does that master mind appear which is capable of new generalizations, justifiably far-reaching." He asks: "Again, is it fair to consider that work unworthy of the name of research which, though it fail to say the last word upon the problem upon which it is engaged, gathers all the data at the time available, reflects upon them and draws legitimate inferences from them, even when the result is only an approximation to the whole truth?" He thinks not; so do I. But the whole question is irrelevant. The question has probably arisen from the following in my paper: "As Huxley says: 'There is one guiding rule by which a man may always find this path [to truth] and keep himself from straying when he has found it. This golden rule is—give unqualified assent to no proposition but those the truth of which is so clear and distinct that they can not be doubted.' Any so-called research less critical is unworthy of the name." If by "legitimate inferences" he means inferences which meet the requirements of Huxley's rule, then we are in accord. My objection is not to the research or its incompleteness, but to tentative conclusions. The problem actually solved is the one formulated by just conclusions. The question which the editor asks appears, however, unfair in that it implies a criticism (erroneous as has been shown) of a portion of an argument away from its context, and entirely overlooks the point of the argument. I am sure that upon sober second thought the editor will lose the fears which he expresses as to the ultimate outcome of the "medical mode of thought." The matter is too extensive for proper exposition in a letter, but in a paper to be presented later, I shall show that it requires no less accuracy of observation nor less of logical reflection than characterizes all scientific methodology, but on the contrary rather more than most scientific procedures, and that its great characteristic is that it is on the whole much more difficult than most work in the basic sciences, because of the inherent peculiarities of the subject matter, with which it deals.

Upon the question of the relation of medical students to research work, he agrees that the majority of medical students are unfitted, especially during their undergraduate years, for original research; and gives reasons for it with which I fully concur. The reason which I give for this same position he does not agree with and in stating it does not state it exactly as given. He further says: "But has he any evidence which would indicate that such an assumption is true? Surely, every-day experience points to the opposite view, and certainly the statements made in his paper can scarcely be regarded as convincing." The alleged assumption relates to the differences which exist in the process of diagnosis and in that of research. I feel quite sure that the assumption will be granted by medical men who are in the habit of making thoughtful and careful diagnoses daily. He also presumably includes in the assumption my statement that research in the basic sciences is capable of being harmful to the young medical man. He offers no evidence to support his own view; the evidence by which I support mine will be presented in my subsequent paper.

Very respectfully, W. S. CHRISTOPHER, M.D.

The Function of the Appendix.

NEW YORK, Sept. 20, 1901.

To the Editor:—On page 852 of THE JOURNAL for Sept. 28, 1901, I find a report of a paper read by Dr. E. P. Hershey, Denver, dealing with the question of the function of the appendix. Dr. Hershey apparently believes that the secretions of the appendix are important in their influence on bowel contents, but we know that such secretions are trifling in amount and not different from those of the cecum. Most of the appendices upon which I have operated have had their function already destroyed by bacteria. Further than that, we know that during middle life the appendix is prone to undergo normal involution changes, so that in later life there is little if any secreting surface left. Dr. Hershey says of the cecum: "This cul-de-sac is the most inviting place for the accumulations of feces. The mass remains here and would become hardened were it not for the secretions that keep the mass thin and moist." I would like to have a record of actual observations made upon this point. Those of us who see the cecum a good many times in the course of a month, note the fact that it is about the emptiest part of the bowel, and might well have been named the jejunum. I have seen several hardened cecums, and have operated many times in cases in which some one had made the diagnosis of cecal impaction, that never yet, so far as I remember, has the cecum contained any palpable fecal matter. The "fecal impaction" was regularly peritoneal exudate, and usually abscess. I make these points because there are many physicians who are anxious to be right, but who are too busy to become properly informed on the subject of the appendix. They gladly seize upon such data as those furnished by Dr. Hershey in order to escape, if possible, from the dictum of authorities who advise operation in appendicitis as soon as the diagnosis is made. Consequently, it seems no more than fair in the interests of science and humanity if we ask Dr. Hershey to give us the result of carefully recorded, accurate observation. In the East we have learned to look at Denver as a city containing representatives of all that is best in modern medical knowledge, and it is unfortunate to have a false note sounded from a section of the country that has gained so well-merited a reputation.

ROBERT T. MORRIS.

Why Withhold Tobacco?

TOLEDO, Sept. 25, 1901.

To the Editor:—This question, whether he should be permitted to smoke or not, came up in the treatment of our late President, and possibly has in it a lesson which should be considered on account of the applicability which it may have to the treatment of surgical cases generally. Does the sudden stopping of the habitual use of tobacco make the bodily functions more resistant to the processes of disease, and more efficient in the healing of wounds? Does the nervous system suffer and lose its balance by withholding its accustomed sedative? Are the secretory system, the excretory system, in fact all of the systems of the body, by the sudden taking from them

of the load to which they have learned to adapt themselves, made stronger, or are they left stagnated because the stimulus which has been prompting them to their abnormal action has been removed?

To smoke three or four cigars in one day would probably kill a man who was not accustomed to its use, but the system of the habitual user of tobacco has become so gradually saturated that it, like the system of the arsenicophagy is able to stand the strain. In the case of the arsenic eater instant withdrawal of the poison is sudden death.

Just why the desire for the narcotic stops during sickness, and immediately upon the receipt of injury, is unexplainable. May it not be the fact that the abnormal sedation which the tobacco has been producing gives way to unbalance, irregularity in functions, and destructive action, upon the withdrawal of the narcotics? Is it just possible that in sickness and injuries where desire for tobacco has been lost, that some preparation of tobacco should be regularly administered hypodermically? J. L. Tracy.

Regarding Christian Science.

Chicago, Sept. 12, 1901.

To the Editor:—In The Journal of July 27 was published what was supposed to be "a sample of Christian Science," "a prayer for a dyspeptic, drawn up by Mr. Hazzard, president of the New York School of Primitive and Practical Christian Science." Please permit me to state through your columns that the gentleman mentioned is not a Christian Scientist, his school is not a Christian Science school, the prayer attributed to him is not a Christian Science prayer, and the publication to which it is credited is not a Christian Science publication. Any deductions, therefore, which might be drawn as to the teachings of Christian Science from the "prayer for a dyspeptic" must be erroneous. Archibald McLellan.

Book Notices.

La Peste Bubonique dans la Republique Argentine et au Paraguay Epidémies de 1899-1900. Rapport Présenté au Département National D'Hygiène par les Docteurs Luis Agote et A. J. Medina, Inspecteurs délégués du Gouvernement Argentin. Paper. Pp. 298. Buenos Aires: Felix Lajouane. 1901.

This report of the National Department of Hygiene of Argentina is an evidence of the thorough appreciation of sanitary questions in that South American Republic. The authors give the history of the introduction and course of the disease in succession into Asuncion, Rosario and Buenos Aires, discuss the local conditions in each place that favored its development, devote chapters to treatment and prophylaxis and conclude with an appendix giving reports of cases. They endorse serum therapy as giving better results in the cases in which it has been employed than other methods of treatment, and the accidents or inconveniences following its use slight. They do not, however, unreservedly hold with Haffkine that serum immunization renders needless other prophylactic measures. Where the serum treatment was impossible in these cities the treatment was largely symptomatic—balneotherapy, cardiac tonics, anti-spasmodics, intestinal disinfectants, etc. Incision of the buboes was practiced, and bleeding was found occasionally of value. The work is a valuable contribution to the not yet too ample scientific literature of this recently recrudescing pest of former times.

Transactions of the Vermont State Medical Society, 1900. Published by the Society. Cloth. Pp. 195. Free Press Association, Burlington. 1901.

The Secretary calls attention to the fact that while 15 or 20 new members are added each year, the total enrolment remains practically the same on account of those who are dropped for non-payment of dues. The membership is given as 219, although how many are back in their dues three years is not stated. There are about 600 regular physicians in the State, hence only about one-third are active members of their State Society. The report of the committee on reorganization is an excellent one and contains recommendations, which, if adopted, can not but be a benefit to the profession of Vermont. In the report of the delegates to examine the graduates of the medical department of Dartmouth College, we are informed that the temperature of that day was 143 degrees below zero—rather cool certainly. The volume contains twelve papers, besides the reports, obituaries, etc.

The Office Treatment of Rectal Diseases Explained and Simplified. Being an Exposition of the Treatment of all Those Diseases, Both Medical and Surgical, of the Rectum, Anus and Sigmoid Flexure, the Cure of which May Be Accomplished Without Surgical Anesthesia. Illustrated. By Rufus D. Mason, M.D., Omaha, Neb., Professor of Rectal and Pelvic Surgery in the John A. Creighton Medical College. Cloth. Pp. 83. Price, $1.50. Omaha: E. B. Festner. 1901.

The author does not attempt to cover the field of rectal diseases, but only those conditions that are liable to be met by the general practitioner. As such the book is to be commended.

A Hand-Book of Genito-Urinary Surgery and Venereal Diseases. By G. M. Phillips, M.D., Professor of Genito-Urinary Surgery and Venereal Diseases, Barnes Medical College. Illustrated by Half-tone Cuts and Special Drawings by L. Crusius, M.D. Cloth. Pp. 313. Price, $2.00. St. Louis, Mo.; Lewis S. Matthews & Co. 1900.

The subjects are treated clearly and concisely. The half tones and drawings are unusually good and instructive. For the student and practitioner it will be found a convenient reference book.

Miscellany.

San Francisco Plague Report, Fortieth Verified Death.

Lee Mon Chong, male, aged 40 years, a cigarmaker by occupation, died on Aug. 30, 1901.

Autopsy.—Body of a Chinese male, fairly well nourished; rigor mortis not present; body still warm, pupils moderately dilated, scleræ not injected. Glandular enlargement well marked in left inguinal region, slight enlargement in right axilla; no local lesion to account for enlargement. Two small ecchymotic spots over bubo in the groin, lividity not marked, slight on dependent parts. Upon incising the bubo, a bloody hemorrhagic fluid exuded; the glands were seen to be enlarged, injected, and surrounding tissues edematous. Smears from the gland, stained with carbol-thionin, showed numerous bipolar staining bacilli.

Abdominal Incision.—Subcutaneous fat was moderately abundant; subcutaneous vessels injected; left abdominal muscles infiltrated. Intestines were slightly distended, moist and glistening, showing a number of dark areas, probably submucous hemorrhages. Little or no fluid was in the abdominal cavity; appendix normal.

Diaphragm, attachment, right, 5th rib. Left, 4th interspace. Lungs met in median line but collapsed anteriorly. Left slightly adherent at apex.

Pericardium.—Area was about normal in extent, contains about 10 c.c. of clear yellowish fluid.

Heart.—Surface was covered with fat; vessels slightly injected; heart muscle soft and flabby. Ventricles full of fluid blood; valves normal. Numerous plaques on surface of aorta; coronary openings free. Heart muscle was pale and in some places evidence of fatty change.

Lungs.—Left lung pits on pressure and crepitates throughout. Pressure causes serum and air to exude from cut surface. No nodules. Lung appears normal except for edema. In the right lung, middle and upper lobes pit and crepitate throughout except at the site of an old tubercular scar at apex. The upper and anterior part of the lower lobe is somewhat firmer than normal, but crepitates, especially about the border. The pleura still glistens, color purplish, interspaced with dark

bluish green. The lower posterior portion of the lobe was completely consolidated; pleura, of a light pinkish color, had lost its luster and contained subpleural hemorrhages. Cut surface of the consolidated portion is rich in blood, light pinkish color. Pressure caused blood, but no air or serum to exude. The appearance does not bear any resemblance to any stage of croupous pneumonia. No tubercles present.

Spleen.—Enlarged to about one and a half times normal size; capsule wrinkled, moderately firm in consistence; color not very red; no white nodules subcapsular, cuts a little firmer than normal. Connective tissue increased; cut surface moderately rich in blood; pulp slightly bulging.

Liver.—Gall-bladder moderately distended, contained no stones. Liver about normal or slightly smaller in size, surface smooth and glistening, of a light chocolate color. Normal in consistence, cut surface moderately rich in blood.

Kidneys.—Left: smaller than normal, soft, fatty capsule well preserved; capsule stripped readily, exposing a light yellowish surface, mottled with red, which was not granular, in which the venæ stellatæ showed prominently. Cut surface rich in blood. Contrast between cortex and pyramids well preserved. Cortical margin normal in breadth; same color or a little deeper than described on surface. Left kidney same as right.

Stomach.—Mucous membrane showed a few submucous hemorrhages. Smears from the spleen and blood did not show any organisms.

Animals inoculated from the glands of the bubo died of typical plague infection.

NEW CASES.

Ng Chon was seen at 821 Washington Street, September 11, by Dr. Kellogg, the city bacteriologist. According to the representations of inmates of the house, he had been sick one week. The Doctor found him with a temperature of 104, pulse 120, with a dry mouth and coated tongue. There was a large bubo in the right femoral region. No evidence of venery. No microscopical examination of fluid from the bubo nor blood allowed. He was removed to the plague hospital and is recovering.

Alexander Winters, a sailor, came from a ship in the harbor. He was taken sick on September 11, on board ship, with vomiting and chills; a bubo developed at the same time in the right femoral region. He came ashore and entered a lodging-house at 812 Third Street, where he remained for two days. He then applied at the Marine-Hospital where he was admitted and where he now is. There was no evidence of venereal disease in his case. Blood taken from the bubo gave a pure culture of the bacillus pestis. The results of animal inoculation are not completed.

Association News.

Nicholas Senn Prize Medal.

The committee on the Senn Medal beg leave to call attention to the following conditions governing the competition for this medal for 1902:

1. A gold medal of suitable design is to be conferred upon the member of the AMERICAN MEDICAL ASSOCIATION who shall present the best essay upon some surgical subject.

2. This medal will be known as the Nicholas Senn Prize Medal.

3. The award will be made under the following conditions: *a.* The name of the author of each competing essay shall be enclosed in a sealed envelope bearing a suitable motto or device, the essay itself bearing the same motto or device. The title of the successful essay and the motto or device is to be read at the meeting at which the award is made, and the corresponding envelope to be then and there opened and the name of the successful author announced. *b.* All successful essays become the property of the ASSOCIATION. *c.* The medal shall be conferred and honorable mention made of the two other essays considered worthy of this distinction, at a general meeting of the ASSOCIATION. *d.* The competition is to be confined to those who at the time of entering the competition, as well as at the time of conferring the medal, shall be members of the AMERICAN MEDICAL ASSOCIATION. *e.* The competition for the medal will be closed three months before the next annual meeting of the AMERICAN MEDICAL ASSOCIATION, and no essays will be received after March 1, 1902.

Communications may be addressed to any member of the committee, consisting of the following: Dr. Herbert L. Burrell, 22 Newbury Street, Boston, Mass.; Dr. Edward Martin, 415 S. 15th Street, Philadelphia, Pa.; Dr. Charles H. Mayo, Rochester, Minn.

Married.

THOMAS J. O'MALLEY, M.D., to Miss Helen M. Ahern, both of Joliet, Ill., July 10.

T. A. HUDSON, M.D., Olive, Tex., to Miss Mattie De Arman, Hico, Tex., September 10.

JAMES PATRICK MOORE, M.D., to Miss Elizabeth Taylor, both of Yazoo City, Miss., October 2.

JOSEPH E. GARDNER, M.D., Fort Worth, Tex., to Miss Rose Montague, at Bandera, Tex., September 11.

A. E. MYERS, M.D., Jamestown, N. Y., to Miss Jessie E. Beacon, Randolph, N. Y., September 18, at the home of the bride.

HENRY BLANKENHORN, M.D., Orrville, Ohio, to Miss Mabel Buckley, Marshallville, Ohio, September 26, at the home of the bride.

Deaths and Obituaries.

Charles H. Guibor, M.D., Rush Medical College, Chicago, 1871, died at his home in Topeka, Kan., September 22, from intestinal obstruction following an operation for carcinoma, aged 59. He was born in St. Louis, Mo., and first practiced in Iowa Falls, Iowa, moving to Kansas in 1875, where he took up his practice at Beloit, remaining there until 1889, when he removed to Topeka. He was a member of the Kansas Board of Medical Examiners for a number of years.

Albrecht H. Trapp, M.D., University of Zurich, Switzerland, died at Lincoln, Ill., September 23, aged 88. He was born in Germany and came to this country in 1837, owing to political differences. For forty years he was an active practitioner at Springfield, Ill., and was elected to the State Legislature in 1854. He always took an active interest in educational affairs.

Enoch Callaway, A.M., M.D., Jefferson Medical College, Philadelphia, 1876, A.B., and A.M., Mercer University, Macon, Ga., died at his home in LaGrange, Ga., of Bright's disease, September 2, aged 48. He was a member of the Medical Association of Georgia, held the position of mayor for two terms and was a prominent physician of Western Georgia.

Albert H. Frederick, M.D., New York University, 1856, died suddenly at his home in Ocala, Fla., September 23, aged 66. He was born at Cusseta, Ala., and served through the Civil war as a surgeon of the 47th Alabama Infantry. He had practiced at Ocala since 1890.

Chauncey H. Hunt, M.D., University of Vermont, Burlington, 1875, died at his home in Montpelier, Vt., September 18, after a long illness, aged 60. He practiced until ten years ago at Worcester, and in 1880 was a representative from that place to the State Legislature.

Harvey L. Cokenower, M.D., College of Physicians and Surgeons, Keokuk, 1877, died at his home in Clarinda, Iowa, September 19, from Bright's disease, aged 46. He was born in Shelby County, Illinois, and had practiced at Clarinda since 1880.

James McJames, M.D., South Carolina Medical College, Charleston, died at a hospital in Charleston, September 24, aged 27. He was a pitcher of note on the Brooklyn baseball

team, although for a time he practiced medicine at Cheraw, S. C.

Simon **Schoonmaker, M.D.,** University of Toronto, 1857, York, died at his home at Pine Hill, N. Y., September 18, aged 64. He practiced for twenty years at Rosendale, but of late years he had not been in active practice.

Thomas **W. McCoy, M.D.,** University of Nashville, Nashville, 1855, died at his home in Laurens, S. C., September 25, after a short illness, aged 70. He served as a surgeon in the confederate army during the Civil war.

Jeremiah **S. Trexler, M.D.,** University of Pennsylvania, Philadelphia, 1853, died at his home in Kutztown, Pa., September 24, aged 74. During the Civil war he was surgeon in the 73d Pennsylvania Volunteers.

Hiram M. Winn, M.D., College of Physicians and Surgeons, Keokuk, 1892, died at Lawton, Oklahoma, September 20, from typhoid fever, aged 50. At one time he practiced in Louisville, Ky.

George M. Morse, M.D., Harvard University Medical School, Boston, 1843, died at his home in Clinton, Mass., where he had practiced for the past fifty-five years, September 23, aged 80.

William B. Harper, M.D., Tulane University, New Orleans, 1885, died at his home in Minden, La., as the result of an apoplectic stroke, September 23, aged 50.

David McKinney, M.D., Jefferson Medical College, Philadelphia, 1860, died at his home in New Brighton, Pa., September 20, after a long illness, aged 72.

George C. Shannon, M.D., University of Toronto, 1857, died at his home in Goderich, Ont., September 8, aged 68. He practiced in Goderich for forty years.

William F. Pratt, M.D., Medical Department Queen's University, Kingston, Ont., 1888, died at his home in Ottawa, Ont., September 19.

Franklin A. Handrick, M.D., Jefferson Medical College, Philadelphia, 1894, died suddenly at his home in Cleveland, Ohio, September 20.

Charles C. Weamer, M.D., Western Pennsylvania Medical College, Pittsburg, 1897, died at Plumville, Pa., September 12, aged 31.

Societies

COMING MEETINGS.

Tri-State Medical Society of Alabama, Georgia and Tennessee, Nashville, Tenn., Oct. 8-10, 1901.
Wyoming State Medical Society, Evanston, Oct. 8-9, 1901.
Vermont State Medical Society, Montpelier, Oct. 10-11, 1901.
New York State Medical Association, New York City, Oct. 21-24, 1901.
Medical Society of Virginia, Lynchburg, Nov. 5-7, 1901.
Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.
Southern Surgical and Gynecological Association, Richmond, Va., Nov. 19, 1901.

Medical Club of Philadelphia.—A reception was given at the Hotel Stratford by this Club, September 26, in honor of the president and members of the Medical Society of the State of Pennsylvania.

Kern County (Cal.) Medical Society.—At Bakersfield, September 12, this Society was organized, and officers were elected as follows: Dr. Thaddeus W. Helm, president; Dr. D. J. Prather, vice-president, and Dr. W. S. Fowler, secretary-treasurer.

Claiborne County (Tenn.) Medical Society.—This Society was organized at Tazewell, September 10, and the following officers elected: President, Dr. George P. Miller; vice-president, Dr. M. G. Walker, and secretary-treasurer, Dr. George P. Lynch.

Northern Berkshire Medical Society.—At the annual meeting of this Society, held at North Adams, Mass., September 24, the following officers were elected: Dr. John H. Riley, president; Dr. Edward E. Russell, vice-president, and Dr. Lyman A. Jones, secretary and treasurer.

American Electro-Therapeutic Association.—The eleventh annual session of this Association was held in Buffalo, September 24, 25 and 26. There were fifty-five delegates in attendance and an excellent meeting was enjoyed. Besides many interesting papers by members, the superintendent of electricity at the Exposition delivered an address.

Philadelphia County (Pa.) Medical Society.—A special meeting of this Society was held in Philadelphia, September 19, for the purpose of organizing a branch society. A permanent organization was effected, to cover the northern portion of the city, the idea being to make more accessible the society meetings to those living some distance from the meeting place to the main body. Dr. H. Brooker Mills was elected permanent chairman, and Dr. Robert L. Pitfield, secretary.

Missouri State and County Board of Health.—The State Board of Health organized with about twenty County Boards at a meeting held in Sedalia, September 10, by the election of the following officers: President, Dr. A. W. McAllister, Columbia; vice-president, Dr. W. F. Morrow, Kansas City, and corresponding secretary, Dr. J. R. Graham, St. Joseph. The object of the organization is to encourage a harmonious working of the State and County Boards, especially in the matter of controlling contagious diseases.

The Fifth International Congress of Zoology.—The principal features of this Congress which convened at Berlin, August 19, were Grassi's detailed report of the Italian Society for the study of malaria and what it has accomplished, and Schenk's communication on the results of his method of sex determination. He claims that time is confirming the correctness of his views, and that his array of cases in which sex was determined by his method of preliminary treatment, is so long and so extensive that the idea of mere coincidence must be definitely abandoned. The profession abroad not only refuse to accept his premises, but state that even if they were true their promulgation would be a social calamity.

Medical Society of the Missouri Valley.—The fourteenth annual meeting of this Society was held in St. Joseph, Mo., September 19, with President Treynor in the chair. After passing resolutions on the death of the President, the Society adjourned to permit its members to attend the McKinley memorial services. On the evening of September 19 an adjournment to Eureka Springs, Ark., was taken, where the annual outing was enjoyed and the regular program carried over from St. Joseph was continued. Following is the list of officers elected for the coming year: President, Dr. Richard C. Moore, Omaha; vice-presidents, Drs. A. D. Wilkinson, Lincoln, and M. F. Weymann, St. Joseph; treasurer, Dr. Donald Macrae, Council Bluffs, and secretary, Dr. Charles Wood Fassett, St. Joseph. The next meeting will be held in Lincoln, Neb., March, 1902.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-first Annual Meeting, held in Philadelphia, September 24-26, 1901.

FIRST DAY.—MORNING SESSION.

President, Dr. Thomas D. Davis, Pittsburg, in the Chair.

DR. GEORGE ERETY SHOEMAKER, on behalf of the Philadelphia County Medical Society as its President, extended a welcome to the Society. He compared the position of the various societies to that of brothers annually welcoming to their homes in turn the other members of a family. In this city there is much to link us to the past in the history of medicine. Here was the life work of many of the leaders who have molded medical thought for generations. From their traditional or direct influence a strong stimulus is yet felt. The hope was expressed that in the development of library systems some means would be found to distribute medical books widely from the central institutions, so that practitioners at a distance might be in touch with the treasures of medical literature. The President extended the thanks of the Society for the warm welcome and remarked that in coming to Philadelphia the Society felt that it was coming to a medical atmosphere.

MAYOR ASHBRIDGE extended a welcome on behalf of the city, which, he said, enjoyed not only a national but an international reputation for its skill in medicine and surgery. So far as the administration of public affairs was concerned, he said

there had been an endeavor to do the best to enlarge the opportunity of the medical student; the hospital for contagious diseases had been opened to the graduates of the colleges. The staff of the Philadelphia Hospital had been enlarged, and to medical gentlemen had been given the selection of those appointed.

DR. JOHN H. MUSSER, Chairman of the Committee on Arrangements and Credentials, presented the program, and announced that arrangements had been made for the holding of clinics.

DR. JOHN V. SHOEMAKER, Philadelphia, offered a resolution that the Society testify to the profound grief of its members at the loss of the Chief Executive of the United States, and that such resolutions be placed in the records of the Society.

Representation in the House of Delegates, A. M. A.

The Secretary, DR. C. L. STEVENS, reported a total membership of 3460. This was a net increase of 110. This membership entitled the Society to seven delegates in the House of Delegates in the American Medical Association, lacking only 41 members of the number entitling the Society to a representation of eight delegates; this number he hoped would be realized by June, 1902.

DR. E. E. MONTGOMERY, Philadelphia, moved that the Nominating Committee be directed to select and nominate seven delegates from the Society to the House of Delegates of the American Medical Association, four for two years and three for one; also sixteen alternates; it to be understood that the first alternate take the office of the eighth delegate if by June, 1902, the Society should be entitled, as there was reason to hope, to the eighth delegate. The resolution was seconded and adopted.

The report of the Board of Trustees showed that the financial affairs of the Society had been prosperous and that no unusual expense had been incurred.

It was with sincere regret that the Board reported the death of Dr. John Curwen, long a most respected and useful member of the Society; once the President, and at the time of his death a member of the Board of Trustees.

The Committee on Publication reported that 4000 copies of THE JOURNAL of the State Medical Society had been published each month, of which about 2500 were distributed monthly to the members of the auxiliary county societies. The advertising pages had been made to conform strictly to the requirements of the Code of Ethics.

Reports of Committees.

The Committee on Pharmacy called attention to the prevalent abuse of hospital and dispensary clinics by patients able to pay for professional services, and recommended that the legislature be asked to pass an act requiring all persons seeking such aid to record their names and addresses, and when unable to write, make their marks, as is customary in legal documents, in a book kept for the purpose, which shall be open to inspection by proper persons, and if possible inflict a penalty upon those who fraudulently receive aid. The use of tablets in set formula was also deprecated.

The Committee on the Rush Monument Fund regretted to report that nothing had been done by the Committee since the meeting at Lancaster.

The Committee on Increase of Membership and Polyclinic Teaching reported an increase of 110 members in the Society. Thirty-one societies have a larger membership than last year and 14 had lost in membership during the year. The Committee suggested that personal visitation is needed in societies lacking vitality. This had proven of value in some individual societies.

The Committee on Archives announced the death of Dr. J. Augustus Ehler of Lancaster, Pa. Dr. Ehler had taken an active interest in the Society from its inception, having been one of the founders. He was particularly energetic in the committee work and most anxious that all matters pertaining to the history of the organization be placed in a convenient locality for consultation by members. The Committee further reported that the cataloguing of volumes deposited in the Library of the University of Pennsylvania had been continued.

The Committee on Examination of School Text-Books reported progress. Two members of the Committee, Dr. Israel Cleaver of Reading, and Dr. John Fay of Allegheny, asked to be discharged. The names of Dr. G. A. Parker of Southampton, and Dr. W. A. N. Dorland of Philadelphia, were suggested to take their places.

DR. HENRY BEATES, JR., Chairman of the State Board of Medical Examiners, gave the number of graduates from the respective medical colleges who had applied for examination during the year with the percentage of success and failure. He called the attention of the Society to the fact that while great advances had been made during the period in which the law governing medical practice has been operative, yet the conditions of medical education to-day are deplorable. He expressed the hope that the Society, standing as it does as the exponent of the highest type of medical education, would assert itself in no uncertain manner in demanding the ideal.

DR. JOHN B. ROBERTS, Philadelphia, Delegate to the Conference on National Legislation of the American Medical Association, reported that the annual conference was held on February 20, 1901, in Washington, and read a brief report of the results of the meeting.

The President contributed a Minute concerning the late Dr. Samuel S. Towler. Dr. Towler was widely known and very successful in his practice. As a matter of conscience he answered all calls, no matter how wearisome or unremunerative. He was the soul of generosity, always having a cordial greeting for all. As a citizen and a business man he had the confidence of all who knew him, and was prominent in Christian work.

Directory of Physicians for the State.

DR. JOHN B. ROBERTS offered a resolution that the Committee on Publication, in conjunction with the Board of Trustees, consider the propriety of publishing a Directory of the physicians of Pennsylvania similar to the Directory published by the New York Medical Association; and, that if the said Committee and the Board of Trustees deem it wise to publish such a Directory, that authority is hereby given for such publication. The resolution was approved and referred to the proper committee.

FIRST DAY.—AFTERNOON SESSION.

Address in Otology.

DR. E. U. BUCKMAN, Wilkesbarre, noted some changes that have taken place in the progress of otology in the last six years. In the beginning of Dr. Buckman's practice of otology mastoiditis was looked upon with considerable dread, but the present methods of radical operation are so successful, and in skilful hands attended with so little danger that now abortive treatment is not continued for any length of time. The treatment of this disease is now one of the most satisfactory procedures in the whole realm of otology. Tinnitus aurium was referred to as one of the least satisfactory conditions to treat and one in which there probably has been the least progress in the last five to twenty years. The use of electrolysis in cases of obstinate tinnitus and increasing deafness he had found beneficial. Success in the treatment of these conditions depends more upon how medicines or instruments are used than upon what is used.

Some Aural Complications of Influenza.

DR. S. MACCUEN SMITH, Philadelphia, stated that influenza has been recognized and treated as such for ages, the epidemics having always been characterized by intervening periods during which the disease seems to have been banished. Brief mention was made of mastoid complications, counseling their early recognition and the adoption of energetic measures for relief of local symptoms and the prevention of additional complication of even more serious import.

DR. CHARLES H. BURNETT, Philadelphia, in discussion, said that when the so-called epidemics of grip or influenza broke out in 1889 he had been practicing otology seventeen years and he had never seen any case of so-called grip presenting symptoms which he had not seen previous to the spread of this affection. The hemorrhagic form he did not think any more

prevalent in grip than in measles. He believed there was no specific excitant in the attacks of grip or influenza.

Incudectomy in Progressive Hardness of Hearing, Tinnitus Aurium and Ear Vertigo.

DR. CHARLES H. BURNETT, Philadelphia, stated that in this disease the surgeon encountered a trophoneurosis of the muscular structures of the middle ear, and not simply a chronic catarrhal process. The chronic catarrnal process often accompanies symptoms of progressive hardness of hearing and tympanic vertigo. The aural symptoms, however, often remain unchanged when the catarrhal symptoms have been relieved. The aural symptoms were outlined. Progressive hardness of hearing is apt to pass from one ear to the other. The treatment advised by Dr. Burnett is the removal of the incus from the worse ear, leaving the remaining conductors in place. The difficulty of the operation necessitates the etherization of the patient. Dr. Burnett's cases show the efficiency of the operation in checking the progress of deafness and in the total and permanent arrest of ear vertigo.

Reasons for Early Operation in Acute Mastoiditis.

DR. WILLIAM H. DUDLEY, Easton, stated that there is a variety of acute mastoiditis, usually a sequel to chronic purulent otitis media, which at no time presents any serious local symptoms. In some of these cases the swelling may be moderate in amount, the tinnitus not great and at no time is there great pain or other general disturbance; yet, when given sufficient time, so extensive may the disease become as to seriously threaten the patient's life. Cases illustrative of this condition were cited. Aside from the intractable chronic otitis media purulenta which may follow these cases, if the condition is allowed to continue, there may ensue extradural abscess, meningitis, cerebral abscess or septic thrombosis of the lateral sinus with their attendant fatalities. He believed that the dangers attending mastoiditis not operated upon in the early stages have not been sufficiently impressed upon the mind of the profession.

DR. B. ALEXANDER RANDALL, Philadelphia, believed that many of the mastoid inflammations were not purulent and do not need operative intervention; at least four out of five cases of redness, swelling and tenderness of the mastoid, in his experience, did not require operation, but would clear up under proper medication and rest.

DR. BURNETT stated his belief that operation was indicated in the presence of one or more of the three symptoms: pain, pyrexia or prolapse in the posterior upper portion of the auditory canal. He referred to the paper of Dr. Shepherd, of Brooklyn, on "Acute Mastoiditis following Acute Otitis Media," which he considered one of the best he had ever read.

Ocular Affections of Childhood Associated with Impaired General Nutrition.

DR. S. D. RISLEY, Philadelphia, gave briefly the clinical history of two cases to illustrate the form of ocular disease frequently occurring during adolescence, but not necessarily dependent upon the peculiar conditions of vitality at that age. He gave a graphic picture of the general conditions. In conclusion he called attention to the important influence the trials of school life when associated with headache and painful hot eyes due to eye strain from abnormal refraction may have over the general health of the child.

Gumma of the Ciliary Body.

DR. EDWARD STIEREN, Pittsburg, in this paper remarked that syphilitic invasion of the deeper parts of the eye, especially the acquired form, usually calls for a guarded prognosis. A detailed report of an apparently hopeless case was given. When the patient was first seen in 1899 the diagnosis of tertiary syphilis was made. When last seen, on July 19, 1901, the only evidence of the gumma was a slaty discoloration of the sclera and the misplaced pupil.

Contagious Diseases of the Eye and Their Treatment.

DR. S. LEWIS ZIEGLER, Philadelphia, said that the successful treatment of contagious disease of the eye presupposed an early recognition of the symptoms and the prompt application of active measures for relief. The contagious diseases were classified under catarrhal ophthalmia, and purulent ophthalmia. He spoke briefly of acute catarrhal and granular conjunctivitis. In these prophylaxis should play an important part. If one eye alone is affected a separate handkerchief should be used for each eye. The local treatment for both conditions was described. The purulent inflammations were detailed with their symptoms. The discharges of the purulent inflammations are usually septic in character and extremely virulent in action. Instructions which should be given the attendant are outlined. The most successful local prophylactic measures in the treatment of ophthalmia neonatorum he said were limited to three: 1, Credé's ointment; 2, the irrigation of the eyes with a solution of mercuric bichlorid, 1 to 4000; 3, a solution of protargol in strength of from 10 to 25 per cent.

Address in Mental Disorders.

DR. ROBERT H. CHASE, Superintendent of the Friends' Asylum for the Insane at Frankford, Philadelphia, took for his subject, "Paresis from the Standpoint of the General Practitioner." Its importance was brought to the attention of the general physician and his responsibility pointed out. The initial stage should be intelligently studied for speedy recognition of the disease, and because it is often the only time when treatment is successful. The history of the disease was given, and the following prominent theories respecting its nature briefly stated: 1, as a complication of insanity; 2, as a distinct form of insanity; 3, if not as a group of cerebral or cerebrospinal affections, at least as a paralytic dementia, to which is associated more or less frequently, and under various conditions, insanity.

Progressive Muscular Dystrophy in Brother and Sister.

DR. A. A. ESHNER, Philadelphia, reported these cases in a brother and sister, aged respectively 13 and 32. The cases were interesting particularly because of their occurrence in two members of the same family, of the history of another dystrophy in the collateral ancestry, and of the presence of a traumatic cerebral disorder in the father. The most plausible explanation of the lesions, the author said, was that attributing them to some developmental defect, resulting in the replacement of muscular by fatty and fibrous tissue, with secondary motor disability and the consequent deformities. The disorder is usually progressive, with unfavorable prognosis. Massage and electricity were mentioned as possible aids in the preservation of undestroyed muscular tissue and in the prevention of deformities. Surgical treatment may be indicated, and mechanical measures may be employed to aid locomotion.

Prognosis in Neuritis.

DR. F. SAVARY PEARCE, Philadelphia, said that in summing up scientific clinical facts of carefully studied cases of neuritis there would be found to exist signs and symptoms indicating the ultimate results in different classes of cases depending upon the pathogenic findings, the variety of cases, etc. The etiology of the case is so closely interwoven with symptomatology and with true foresight or prognosis, indeed, that not anything like definite results can be prognosticated until the cause is determined. Examples of needle prick and gunshot wounds, as affecting nerve tissue badly, were stated. The prognosis in such traumatic cases is usually very grave. Cases were referred to exemplifying this. It was pointed out that pressure neuritis should be differentiated from the palsies of occupation neuritis in which latter there is usually a central cortical asthenia; the local disability will depend upon the cure of the primary. In the ordinary pressure neuritis the prognosis is good. Predisposition by alcoholism should be borne in mind in these cases. Degeneration of peripheral nerve trunks after severance was spoken of; also diathetic causes of neuritis. Reference was made to the gastro-intestinal tract as of importance in the correction of disorder in this part of the body.

Some Cases of Hysteria.

DR. EDWARD E. MAYER, Pittsburg, emphasized the statement that hysteria is always a psychic disease; and, that the various symptoms are but the result of this primary mental con-

dition. The treatment advised is a psychic one, mental or suggestive therapeutics being necessary. A number of cases were described.

President's Address.

DR. THOMAS D. DAVIS delivered the address on the evening of the first day of the meeting, followed by a reception tendered to the Society by the Philadelphia County Medical Society. The title of the address was "Pioneer Physicians of Western Pennsylvania." Dr. Davis gave an interesting account of the perils and privations experienced by the physicians who crossed the Alleghenies in the latter part of the eighteenth century and ministered there to the sick and wounded. Many suffered death at the hands of the Indians. "The pioneer doctor," said Dr. Davis, "was often also a farmer, a minister or a school teacher. He traveled over several counties, and often made long and perilous journeys alone. But he did his duty, danger or no danger, as his successors do now."

(To be continued.)

AMERICAN PUBLIC HEALTH ASSOCIATION.

Twenty-ninth Annual Meeting, held in Buffalo, Sept. 17-20, 1901.

President Dr. Benjamin Lee, Philadelphia, in the Chair.

There were many representatives present from the United States, Porto Rico, Canada and Mexico.

Opening Address.

DR. STEPHEN SMITH, New York, one of the ex-presidents of the Association, made the "Opening Address." He referred to the havoc which death had wrought in the ranks of the Association during the past decade, and in giving a history of the public health system of the United States said in part: "Thirty years ago there were not more than three or four well-organized municipal boards of health in this country, but to-day there is scarcely a civil organization without its department of health. Within a single decade this Association has been largely instrumental in the development of a complete system of public health administration in this country, namely, municipal, state and national. A national board of health, which was at one time established by Congress, existed but four years, and for twenty years we have been without such a body chiefly because of a want of harmony among those who approach Congress on the subject."

Dr. Smith then referred to the early history of the Marine-Hospital Service, saying that it was originally created at the close of the eighteenth century in imitation of the English system, when the sailor's home was on the sea, but since the steamship has supplanted the sailing vessel, the sailor's home is at the port. All great advances, he said, in health legislation result from the devastation of epidemic pestilences.

DR. A. L. GUYON, in moving a vote of thanks to Dr. Smith for his paper, drew attention to the fact that while on his right sat the Director General of Public Health of Canada, and while on his left sat the supreme head of the sanitary department of Mexico, the United States had no such officer, and said that a demand should be made on the government to make such an appointment.

Out of respect to the memory of President McKinley, and in accordance with the national and state proclamations relating thereto, it was decided to hold no meeting on Thursday, September 19.

Dr. Frederick Montizambert, of Ottawa, Canada, and Dr. Eduardo Liceaga, of Mexico, feelingly referred to the sad event which had just culminated in this city, and extended the sympathy of themselves and their countrymen.

Some Results of the Army Canteen or Post Exchange From the Standpoint of Discipline and Hygiene.

CAPTAIN EDWARD L. MUNSON, assistant surgeon in the United States Army, read statistics he had compiled from the official records of the War Department, comparing the figures of two periods. The first period, which he called the pre-canteen period, consisted of the seven years from 1885 to 1891, inclusive. Though the canteen was first introduced in the army in 1889, it was not thoroughly established until 1892. The second period began with that year and ended with 1897. He did not quote figures after 1897, because he did not believe the figures of the last three years of active service in the army could fairly be compared with the figures for a period in the time of peace, although he commented that, as a matter of fact, the figures for 1898, 1899 and 1900, show even a more marked improvement in those conditions of the army that were affected by the canteen than the figures for the six years immediately preceding 1892 showed over the precanteen period from 1885 to 1891. The paper showed that for the ten years from 1878 to 1887 the ratio of soldiers entered upon the sick reports for alcoholism was as 64.28 to 1000; that this rate was diminished as the canteen was gradually introduced, and that comparing the period of 1885-91 to the period of 1892-97, the statistics showed a reduction of 23.6 per cent. in the entries for alcoholism on the sick list, in favor of the latter period. That, whereas, in 1890, before the canteen was fairly established, the number of posts at which the alcoholism entries on the sick list exceeded 10 per cent. of the total strength of the garrison, in the following year the number of such posts was 11, and each succeeding year the number was reduced until, in 1897, there were only two posts throughout the army which showed a greater rate of alcoholic sick cases than 10 per cent. of their total strength. The author showed that the gravity of the cases of alcoholism also was reduced through the influence of the canteen, and that the number of cases of insanity diminished during the period in which the canteen was thoroughly established.

The profits of the canteen each year were returned to the men for the purpose of buying better food, reading matter, gymnasium and athletic equipment, and in other ways to make their lives more comfortable and the military service more attractive. The writer showed that during the period of 1892-1897 there was an increase of 13.3 per cent. in the number of soldiers making deposits with the army paymaster over the number for the precanteen period, 1886-91. Also that the average number of convictions by court marshals for drunkenness during the precanteen period was 372 a year, whereas the average number after the canteen was established was but 160.

Much might be said to show the remarkable influence which the canteen, with its restricted sale of beer and light wines, has had in preserving the health of troops, maintaining discipline and promoting temperance; but in view of the figures given further argument on the subject would seem unnecessary. The canteen, as formerly operated, was a positive element for good, and so regarded by 95 per cent. of the more than 600 officers of the army who have made reports concerning its influence to the Secretary of War.

At the conclusion of Dr. Munson's paper, the following resolution was offered by Dr. Charles A. Lindsley, of New Haven, Conn., which was adopted:

Resolved, That this body deplores any action in curtailing the operation of the army canteens or post exchanges, and in the interest of general and military sanitation and temperance recommends their establishment as formerly existing in the United States.

DR. CHARLES R. GREENLEAF, army surgeon, described the sanitary conditions in the Philippine Islands since the United States came into occupancy of them.

Tuberculosis.

DR. FELIX FORMENTO, New Orleans, stated that the discovery of the tubercle bacillus was one of the greatest events of modern medicine, unifying into one classification many affections considered as being of a different character; also making diagnosis perfectly certain; it was shown that the disease was communicable from man to man; that the sputum of consumptives was the great carrier of infection; but was it not going too far to affirm that tuberculosis was only transmissible by contagion, and that heredity played no part in this transmission? The observation of sanitarians had shown that heredity, as in cancer and other affections, was a powerful agent of transmission. Some cases of direct transmission to

the fetus in utero had been observed. Without hereditary predisposition local infection would remain sterile in the great majority of cases. The air swarmed with microbes, and those who were predisposed succumbed. In order that a seed might develop two conditions were required, an active seed, and a proper soil. The same is true of a disease germ. All debilitating causes by lowering the powers of resistance furnished a favorable nidus for the development of the tubercle bacillus. War should be waged on the bacillus, and we should try to exterminate it by all possible means, as well as destroy the sputum; the disinfection of rooms occupied by consumptives was important, and a rigid inspection of milk and meat in spite of the claims of Professor Koch. Marriage of consumptives should be prevented. All places where numbers congregate should receive special attention, and the general public, when once informed, would become a most powerful auxiliary in the crusade against tuberculosis.

DR. JESUS CHICO, of Mexico, read a paper in which he detailed some observations tending to prove that the meat and internal organs of tuberculous animals brought about the appearance of tuberculosis in the persons who ate them.

The British Congress on Tuberculosis.

DR. FREDERICK MONTIZAMBERT, Director General of Public Health of Canada, read a paper on this subject, in which he laid great stress on the curability of the disease, if taken in time, and all agreed in regarding human sputum as the chief medium of infection. He stated that the feature of the Congress was the address by Dr. Koch, more particularly that part dealing with the alleged non-identity of bovine and human tuberculosis, and the non-transmissibility of the disease. The feeling throughout the Congress seemed to be that the statements of Koch were made prematurely and upon insufficient data. The position of eminent authorities who criticised Dr. Koch's announcement was essentially uniform.

After the reading of Dr. Montizambert's paper, there was a general discussion on the subject of tuberculosis, which was participated in by several members of the Association.

Dr. Chico, of Mexico, read the paper of Dr. Francisco Berbaldez, on "Remarks Intended to Show the Character of Human Vaccine as a Preventive of Smallpox."

At the Tuesday evening meeting, Mr. Ansley Wilcox, Buffalo, delivered an address of welcome, in which he paid a glowing tribute of affection and respect to President McKinley.

President's Address.

DR. BENJAMIN LEE said that among the problems with which the Association had to deal was that of the protection, safety and welfare of the community against the possible infection of leprosy; that the moral leper was sometimes infinitely more dangerous than the physical leper. The anarchist was the moral leper, and it was high time that we undertook to limit the spread of this, the most horrid of all infections.

The next meeting was held on Wednesday, September 18, at which time reports were read of the Committee on Pollution of Public Water Supplies, Etiology of Yellow Fever, and cases of yellow fever observed on the two coasts of the Mexican Republic, from September 17, 1900, to August 31, 1901.

Yellow Fever.

DR. WALTER REED, Washington, D. C., said in part as follows: "We were able under strict rules of isolation to bring about an attack of yellow fever in 10 non-immune individuals out of a total of 13 by means of the bites of mosquitoes—the stagomyia fasciata—that had previously been fed with the blood of yellow fever patients during the first, second and third days of their attacks. We were thus able to establish in the most practical manner that the mosquitoes serve as the intermediate host for the parasite of yellow fever. At the same experimental station we were able to demonstrate that yellow fever can not be induced through contact with the clothing and bedding of yellow fever patients, even though these articles had been previously thoroughly soiled with the excreta of such patients."

Dr. Reed then described in detail the mosquito which carried the infection of yellow fever, as to its history, method of propagation, habitat, breeding-places, method of generation, and measures that should be taken to prevent them from infecting healthy individuals and guarding the sick against bites of these insects. He said the life of this mosquito was about five days, if deprived of water, and if a voyage at sea had consumed more than that time, the mosquitoes contained in the hold of the vessel would have perished unless they had access to water, or moisture, and the danger of infection lay not in the cargo or personal baggage, but in the individual sick with the disease. In 1901 there was a reduction of 83 per cent. in yellow fever in the City of Havana.

A paper was presented by Dr. A. H. Doty, Health Officer of the Port of New York, dealing with the practical methods of quarantine necessary in view of the changes in our belief in regard to the necessity of disinfection in yellow fever.

A recess was then taken until 3 p. m., at which time resolutions were adopted to the effect that every effort should be made by sanitarians to diminish the mortality of tuberculosis; that sufficient facts have not been offered by Professor Koch to prove that human and bovine tuberculosis are different diseases; that municipalities regulate against expectoration; that they should compel notification by physicians of cases of tuberculosis; that they should establish municipal sanatoria for the benefit of persons in families of limited means; that tenements, factories, workshops, schools and other public institutions should be inspected in order to promote cleanliness, ventilation and other sanitary conditions.

A paper was read by Dr. Georgas, covering about the same ground as the one submitted by Dr. Reed.

A general discussion of the subject of yellow fever was then indulged in by the members of the Association, and some of the members, among them Dr. Formento and Dr. Wasdin, dissented from the views expressed in the paper of Dr. Reed. They maintained that yellow fever was probably transmissible by fomites. However, Dr. Reed in his closing remarks on the subject was very sanguine of the position he had taken, and claimed that the experiments conducted in Havana were absolutely conclusive.

Several reports were submitted during the afternoon, among which was the report of the Committee on the Relation of Forestry to the Public Health, by Professor William H. Brewer, New Haven, Conn.; also a report on Bacterial Purification of Water by Freezing, by Mr. H. W. Clark, Boston, Mass. Professor S. H. Woodbridge, Boston, submitted the report of the Committee on Car Sanitation.

DR. A. WALTER SUITER, Herkimer, N. Y., read the report of the "Committee on the Cause, Prevention and Duration of Infectious Diseases." This was followed by the report of the Committee on Disinfectants and Disinfection, by Dr. Hibbert W. Hill, of Boston, Mass., after which there was a short discussion on them.

On Thursday, the third day of the meeting, there was no business transacted, but the President called the meeting to order at 10 o'clock as usual, at which time resolutions of sympathy and regret in regard to the death of the late President McKinley were passed unanimously by a rising vote.

Drs. William Bailey, of Louisville, and C. P. Wilkinson, of New Orleans, made short speeches on the resolutions, which were very appropriate and much appreciated, after which the Association adjourned until Friday morning at 10 o'clock.

DR. JUAN BRENA, of Zacatecas, Mexico, read a paper on "Notes on the Necessity of Attending to the Hygiene of the Mouths of Pupils of Schools." The author stated that the bacillus of Koch had a predilection for the buccal cavity of the mouth, which favored greatly its multiplication. He said it had been demonstrated that whatever the form might be of oral sepsis, it was susceptible of causing all the phlegmoses connected with the local organism. Many cases of septic diseases of the mouth were due to the dental caries and to that alone.

DR. FRANK W. WRIGHT, New Haven, Conn., read a paper on "The Influence of School-Life Over Health." The author said, in part, that the first principles of school hygiene were embodied in the sites for the building, construction and furniture. With proper care natural ventilation was superior to artificial ventilation. Some of the diseases affecting children were near-sightedness, diseases of the spine, disorders of the digestive system, tonsillitis, consumption and contagious diseases. Nervous diseases were not at all infrequent and affected the teachers as well as the pupils. Impure air, defective light and mental strain were the principal causes of these troubles. Many failures were due to the long hours. The exercise and refreshment taken during intermission were not of the right nature and the lunches were sometimes made up of sweets and other indigestible food.

DR. GUZMAN, of Mexico, followed with a paper along the same lines, entitled "Hygiene in Its Relation to the Primary School," and among other things he said that aid to the physician must come from the teacher. In his belief teachers should be trained to help the inspecting physician so as to be able to discover diseases produced by ill-directed school-work, contagious diseases in the school, examination of the physical condition of pupils at the time of their entrance to school, and at regular intervals thereafter.

DR. LUIS G. ESPINOZA, of Vera Cruz, Mexico, read a paper on "Cremation in Its Relation to Sanitary Legislation." He divided the subject into three parts: 1, the merits and demerits of cremation; 2, the establishment of hygienic regulations in cemeteries, and a discussion of their respective value; 3, he concluded in favor of compulsory cremation in contagious diseases.

There were several reports of committees and a few papers which were not read, owing to lack of time, as there were no sessions held on Thursday, but these papers and reports will appear in the official proceedings of the Association.

The following officers were elected for the ensuing year: President, Dr. Henry D. Holton, Brattleboro, Vt.; first vice-president, Dr. Walter Reed, U. S. Army; second vice-president, Dr. Jesus Chico, Guanajuato, Mexico; secretary, Dr. Charles O. Probst, Columbus, Ohio; treasurer, Dr. Frank W. Wright, New Haven, Conn. New Orleans, La., was selected as the place for holding the next annual meeting, but the exact date was not determined.

SAN FRANCISCO MEDICAL SOCIETY.

Regular Meeting, held Sept. 10, 1901.

The President, DR. GEORGE H. EVANS, in the Chair.

Cardio-Vascular System in Diabetes.

DR. GEORGE E. EBRIGHT presented a paper on this subject. The alkalinity was said to be much diminished, especially during coma; fat was frequently increased in the blood. The red corpuscles may be broken down into a granular material and glycogen may be demonstrated in them. The number of red cells is diminished at first, because sugar in the blood draws water from the tissues into the vessels, thereby diluting the blood. Increased diuresis soon frees the blood from an excess of sugar and water and so causes concentration. Thus the blood counts will differ within wide limits.

Pericarditis occurs sometimes and the myocardium is often pale and soft, often hypertrophied and in advanced cases marked fatty degeneration is present; glycogen is present, being found between the muscular bundles. Endocarditis with valvular changes is rare.

Arteriosclerosis is seen in long-standing mild cases, but if the sugar is not constant in the urine the vessels seem to suffer less. In the train of these arterial changes follow a number of important secondary conditions. In the brain may occur apoplexies or cerebral softening. There may be transient hemiplegia, monoplegia, aphasia, vertigo of a simple form or associated with a slow pulse and syncopal or epileptiform attacks. The condition of the vessels and kidneys are likely to account for the failure of the heart and the attacks of asthma and angina pectoris. Diabetic gangrene is due to arteriosclerosis or to nerve changes, the former being the most potent cause. Intimately associated with the sclerosis of the vessels are the changes in the liver, pancreas and the kidneys. There are seen in these organs in the severe cases, deposits of iron pigment about the vessels due to the destruction of the red blood corpuscles. This hemochromatosis is assigned as a cause of cirrhosis of the liver and the pancreas resulting in diabetes. Cirrhosis is either of the atrophic or hypertrophic type, is particularly apt to occur in those cases in which there is passive congestion from cardiac failure. On account of such changes in the liver and pancreas atheroma has been called a cause of diabetes.

In conclusion, it may be stated that the subjects of arteriosclerosis should be viewed as possible victims of diabetes, especially if they present any of the usual symptoms of the disease. In the event of failing to discover sugar in the urine 30 grams of glucose may be administered. Failing then to obtain a temporary glycosuria one should feel content that there was little likelihood of being subjected to the humiliation of having some more fortunate observer arrive at a proper diagnosis which in an intermission a single test had failed to reveal.

Dietetic Treatment of Diabetes.

DR. E. O. JELLINEK drew attention to the latest conclusions concerning the circulation of sugar in the blood, according to the recent investigations by Kolisch and others. These investigators have proven that by far the largest part of sugar circulating in the normal, as well as in the diabetic blood, is not pure dextrose, but is a combination with lecithin, forming probably jecorin, and as such is not excreted by the kidneys, sugar appearing in the urine only when either the increase of sugar in the blood is too great to be combined with the available lecithin or if from any reason a decomposition of the jecorin occurs, which results in the liberation of sugar. The work of these investigators would seem to show that diabetes is not a lower assimilative power of the cells, but a pathologic state, in which the protoplasm of the cells separates its own sugar, and the ingestion of food under such pathologic conditions causes an irritation of the cell, in consequence of which sugar is separated, the amount depending upon the intensity of the irritation.

In the grave form of diabetes meat should be interdicted, and the patient placed on an absolute vegetable diet; green vegetables are best adapted for this purpose, and should be boiled with large quantities of water, as they lose part of their sugar through boiling; after this they can be prepared with large quantities of fat. The experience of Kolisch shows that by this form of food carbohydrates can gradually be permitted. In addition, the following is also allowed: Eggs, milk (buttermilk preferred) up to one liter, butter, cheese (cream cheese), fresh fruit, grapes excepted; moderate quantities understood.

If in the milder forms meat be permitted once or twice a week, it is to be boiled, and never more than 200 grams daily be allowed.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Twenty-seventh Annual Meeting, held at Put-in-Bay Island, Ohio, September 12, 13 and 14, 1901.

President Dr. A. H. Cordier, Kansas City, Mo., in the Chair.

(Concluded from page 851.)

Address in Medicine.

DR. FRANK BILLINGS, Chicago, selected for his subject, "What Are the Qualifications Necessary for the Success of the Practice of Medicine?" He said that the qualifications of success, in any walk in life, depended upon the meaning of the word success. Not uncommonly success meant to the majority of mankind the acquisition of wealth. Without a living income life was too full of anxieties to allow one to do good work. The average physician, said the speaker, probably received less compensation for his services than any other member of society, when one considered the time and money spent

in preparation, the responsibilities assumed, and the character of the service rendered to the patient. To-day the problems in medicine were so profound that a good preliminary education was necessary to enable the student to pursue the study of medicine rationally and successfully. While a college or university education might not be essential to fully prepare one for the study and comprehension of medicine, still it gave one broad culture, a discipline of mind, which added to the pleasures of life of the practitioner, if it did not bring him material advantage.

DR. A. M. PHELPS, New York, discussed the subject of tubercular disease of the spine, lateral curvature of the spine, and the proper treatment of each.

Congenital Valvular Obstipation.

DR. THOMAS CHARLES MARTIN, Cleveland, said this was the result of embryological hyperplasia or overgrowth of the rectal valves, which was characterized by an abnormal depth of the valve, or to such anatomical propinquity of two valves that they overlap and establish under the pressure of the descending force a temporary diaphragm. The symptoms were more or less straining for defecation of solid or semi-solid feces, which developed at an early period and continued.

Varicose Veins and Their Treatment

DR. J. LIVELY JOHNSON, Louisville, Ky., said that varicose veins of the first degree were of little importance, aside from the mental anxiety of the patient, but as the varicosity advanced, the veins assumed a more grave character and were often a source of annoyance to both patient and surgeon. A varicosity might exist in any part of the body. This condition of the veins was found most frequently in certain localities, as the par.piniform plexus and in the veins of the foot, leg and thigh. One of the greatest dangers to the patient suffering from varicose veins was the danger of a sudden rupture, with perhaps fatal loss of blood. Inflammation and thrombosis might frequently occur. The only rational line of treatment to be pursued in the management of varicose veins, in whatever locality, was, as near as possible, to completely remove by extirpation the entire diseased vessels. The surgeon had the choice of a number of operations for the radical cure of varicose veins of the lower extremity. He must be able to adapt the surgical procedure to the case in point.

Use and Limitations of the Elastic Ligature in Intestinal Surgery.

DR. THEO. A. MCGRAW, Detroit, said that the elastic ligature was the most advantageous method of making intestinal anastomosis in cases of pyloric stenosis, and of ulcer of the stomach, in chronic partial stenosis of the intestine, and in certain forms of gangrenous hernia. It could rarely be used to advantage where it was necessary to excise any portion of the intestine. Rules were given for its use, and an exhibition of the proper method.

DR. H. O. WALKER, Detroit, reported cases of intestinal resection and approximation by the Connell suture, and contrasted it with other methods of approximation. He spoke highly of this suture, and recommended its use.

Surgical Features of Typhoid Fever and Dysentery.

DR. HAL C. WYMAN, Detroit, held that early operations for perforation in typhoid fever gave the best results. Physicians should anticipate perforation and intestinal hemorrhage in typhoid fever of a severe type by surgical operation, which promised to heal the ulcerated bowel before it perforated or bled. In severe cases of a threatening type, the author said, why not open the cecum near the ileo-cecal valve, establish a fistula through which a tube might be passed cautiously into the ileum and the ulcerated region daily washed with normal salt solution until it healed, and also the colon to rid it of infecting bacteria? When the patient was convalescent, the fistula would close spontaneously.

Some Indications for Gastro-Enterostomy.

DR. WILLIAM J. MAYO, Rochester, Minnesota, based this paper on experience derived from 64 operations. In malignant disease gastro-enterostomy was indicated only if symptoms of obstruction were present. The mortality was high, 25 to 30 per cent. The writer lost 4 out of 16 cases. The reason for this mortality lay in the bad condition of the patient. The early cases in good condition needed radical treatment, and the latter operation (pylorectomy, etc.) on this account had an even lower mortality than gastro-enterostomy, which had no such limitations. For open ulcer, gastro-enterostomy was of the greatest benefit if the ulcer was situated near the pylorus, and it usually was. Under such circumstances, the stomach was of normal or increased size, the latter condition being due either to obstruction or pyloric spasm. If the ulcer be distant from the pylorus and the stomach contracted, gastro-enterostomy had less value and the anastomotic opening might close, although the ulcer was usually healed before this took place. The writer had had 13 gastro-enterostomies for open intractable ulcer, with one death. For benign obstruction without regard to origin gastro-enterostomy was the operation of choice, the cure being immediate and lasting. Pyloroplasty enlarged the outlet, but if the stomach was very large and pouched, the degenerated muscle fiber might fail to elevate the food to the pylorus and relief was not always afforded. Gastro-enterostomy drained from the lowest point, and was superior in every way to the plastic operation. In 35 gastro-enterostomies of this class only one died.

DR. WM. J. GILLETTE, Toledo, read a paper in which he reported 100 cases operated on for appendicitis.

Suture of the Abdominal Wall.

DR. CHARLES DAVISON, Chicago, said the main points are, closure of any laparotomy wound by suturing each layer with continuous silkworm gut suture, the ends of which are left out at the angle of the wound, to be removed when healing has occurred. The suture in the strong fascia is tied in position at each end in the fascia with a knot that can be unlocked by traction on the exposed ends when the stitch is to be removed. The advantages of the method are: 1, certainty that all suture or ligament material placed in the wound has been made sterile by boiling in water; 2, accurate layer approximation of tissue; 3, removal of the buried sutures when healing is complete; 4, capillary drainage from each layer; 5, safety of intestines from injury during the application of the sutures; 6, rapidity of application; 7, minimum line of irritation on the peritoneal surface and consequent adhesion to viscera; 8, slight scar in the skin, there being no perforation of the skin by sutures; 9, all of the advantages of a permanent buried suture without the danger of future irritation and extrusion; 10, the advantages of an absorbable suture without the danger of sepsis from the suture and without producing a nidus for septic germs from the blood current during absorption.

DR. TRUMAN W. BROPHY, Chicago, demonstrated some cases of surgery of the palate by the aid of stereopticon views.

DR. M. L. HEIDINGSFELD, Cincinnati, discussed some causes of ignored syphilis and their remedies, and gave clinical examples.

Hematology.

DR. L. H. WARNER, New York City, spoke of the imperfect methods of obtaining blood from patients for microscopic examination, and said that the subsequent incorrect methods of fixing and staining specimens had frequently caused errors, the results being of no value as an aid to diagnosis. The incorrect understanding as to the physiologic action of the electro-saline halogen derivatives (iodin, bromin, chlorin), especially as to the amount resorbed (chemical uranalysis), had caused leucocytosis to be wrongfully attributed to other causes. The blood in infectious diseases, if properly obtained and examined in the hot stage, showed certain histologic changes in the red cells, also certain staining affinities which enabled the hematologist to arrive at an early diagnosis in cases of syphilis, carcinoma, etc.

Hay Fever.

DR. A. D. MURPHY, Cincinnati, said three conditions were necessary to produce the complaint, namely, depleted nerve centers abnormally sensitive to uric acid; abnormal condition of the nasal cavities, and atmospheric and climatic conditions.

Consequently, to effect a cure it was necessary to eliminate the uric acid, restore the depleted nerve cells to their normal condition, and relieve the effects. Hot baths and exercise and the careful selection of food were all of importance. As regards medication, he relied principally on a combination of arsenic and solution of gold, supplementing it with local applications of the suprarenal extract, or its active principle, adrenalin.

Scientific Aids to Diagnosis.

DR. HENRY D. HOLTON, Brattleboro, Vt., passed over percussion and ausculation as means of examining the heart and lungs, and simply mentioning the importance of making chemical and microscopic examinations of the urine in cases where the symptoms indicated an abnormal condition of the kidneys, and also those in which the symptoms were vague and uncertain. He proceeded to refer at length to an aid that had not found general favor with the profession, to wit, the use of the ophthalmoscope in many affections of the brain and spinal cord, in which he contended it had been proved to be of great value. He also spoke of the help to be derived from the examination of the blood.

Dentist's Neck.

DR. ALBERT E. STERNE, Indianapolis, portrayed a hitherto undescribed neurosis to which he gave the name of "Dentist's Neck." When it first attracted his attention, he thought the affection was unique, but he had since come to the conclusion that it was by no means rare, and that it sometimes attained the dignity of seriousness to the afflicted individual. As to the pathology of the affection, he admitted that he had to rely largely on conjecture. He believed that it was in many respects analogous to other occupation neuroses, not only in its etiology of regionary overstrain, but also in its cerebral functional character. In all these complaints he considered the peripheral manifestations as secondary to the localized brain-cell fatigue.

Necessity of and Indications for the Bed-Treatment of the Insane.

DR. F. P. NORBURY, Jacksonville, Ill., said insanity, in its incipient stage, responded readily to treatment, hence the importance of early recognition and appropriate treatment.

DR. HAROLD N. MOYER, Chicago, discussed the subject of "Puerperal Insanity."

DR. JOKICHI TAKAMINE contributed an account of his discovery of the active principle of the suprarenal gland, to which the name of adrenalin has been given. He also explained the mode of preparing the drug.

DR. B. T. WHITMORE, New York, in a paper on "Indian Contributions to Therapeutics," showed that the modern so-called Indian remedies have no connection with any system of medication practiced by the aboriginal Americans.

The Dyspeptic's Diet.

DR. GEORGE D. KAHLO, Indianapolis, contended that diet was a more important therapeutic agent than medicine. Perfect nutrition was of primal import, and could only be maintained by a mixed diet, in which there must be a proper proportioning of the elementary food substances.

Personal Element of Error in Therapeutics.

DR. GEORGE F. BUTLER, Alma, Mich., said the personal elements of error are accepted in all the exact sciences, not excluding astronomy. In medicine this element does not receive allowance, except to some slight degree in histology, pathology and neurology. It is practically neglected in therapeutics. This is due to the crude empirical methods employed, and the lack of judicial training. The personal element leads to the eulogy of worthless remedies and the ignoring of unusual effects of beneficial ones. The early but ignored recognition of the uselessness of sarsaparilla by Weir Mitchell illustrates this. Only the recognition of this personal element can render therapeutics scientific. The elements involved are proper diagnosis, not merely of the disease, but of its type, recognition of individual peculiarities of the patient, recognition of the proper preparation of the remedy, recognition of its untoward effects, and, finally, recognition of the fact that pathologic states indicate a new force introduced into the organism which disturbs its balance.

The Acquirement of Nervous Health.

DR. F. SAVARY PEARCE, Philadelphia, discussed the pathogenesis of nervous and mental diseases, and from the standpoint of salient signs and symptoms of the so-called "nervous breakdown" in the earlier periods of development, detailed medical guidance in prophylaxis. Insistence is made upon the urgent necessity of more serious recognition by the profession of the points elucidated in the paper, if the wear and tear of modern exacting American life is to be forestalled in its baneful influence upon the acquired nervous temperament of many, and of business men in particular, in the temperate zone of the United States. Cases cited and good results given. A short symposium on tuberculosis was introduced by Dr. Charles F. McGahan, Aiken, S. C., who dealt with the treatment of the disease in the patients' homes. He was followed by Dr. Howard, Champaign, Ill., who reported favorably on the treatment of tuberculosis with formaldehyde and its salts. Dr. William A. Dickey, Toledo, Ohio, who read the third paper in the series, spoke on the attitude of the profession toward the public and the individual suffering from tuberculosis.

The evil effects of alcohol were discussed in papers by Dr. T. D. Crothers, Hartford, Conn., and Dr. T. B. Greenley, Meadow Lawn, Ky. Dr. Charles H. Shepard, Brooklyn, in a contribution on "Auto-Intoxication and Its Treatment," entered a plea for the greater use of Turkish baths. Dr. Ernest Gallant, of New York, narrated his observations on a tripartition in the study of the female pelvis. Dr. N. Stone Scott, of Cleveland, showed stereopticon slides from original photographs, illustrating the anatomy, embryology, histology, comparative anatomy and pathology of the appendix.

Dr. Reginald A. Sayre, of New York, delivered the "Address on Surgery." He reviewed the status of surgery during the past and noted the changes that have taken place in men, methods and modes of thought, and speculated on the position which surgery would attain during the next one hundred years.

After election of officers, and the passing of resolutions on the death of President McKinley (see last week's issue, p. 792) the Association adjourned to meet in Kansas City, Mo., in 1902.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

The Treatment of Whitlows.

The following treatment has been recommended for the treatment of felon: The felon should first be incised deeply and aseptic gauze saturated in the following solution introduced into the open wound as deeply as possible, over which a compress of a solution of plumbi acetas is applied:

R.	Iodi (pure) 3iiss	10
	Tinct. iodi	
	Tinct. rhatany āā 3i	4
	Pot. iodidi 3ss	2
	Glycerini 3i	32

M. Sig.: For external use as indicated above.

It is stated that this treatment will cause suppuration to cease immediately and healing of the wound in a very few days.

Treatment of Purulent Pleurisy (Empyema).

It is recommended by Capitan, in *La Méd. Mod.*, that all fluid possible be removed by aspiration; if the cavity refills, remove the fluid again and inject a few drops of camphor and beta-naphthol, equal parts, or some peroxid of hydrogen. If this does not stop pus formation an opening should be made under cocain anesthesia and drainage established. He thinks

the removal of a rib to be unnecessary. To avoid cardiac and respiratory disturbances resulting from the removal of the pressure in the cavity, he recommends the following in the form of an injection.

℞ Cocainæ hydrochloratis .....gr. iss |09
Morphinæ hydrochloratis .....gr. ¾ |05
Sparteinæ sulphatis .....gr. iii |18
Atropinæ sulphatis .....gr. 1/3 |02
Aq. destil. .....3iiss 10|

M. Sig.: Inject fifteen to thirty drops hypodermically as heart stimulant and to allay the cough.

As a substitute the following may be employed as soon as the fluid is removed:

℞ Sparteinæ sulphatis .....gr. ¾ |05
Caffeinæ citratæ .....gr. iii |18
Sodii benzoatis .....gr. iii |18
Aq. destil. .....m. xv 1|

M. Sig.: Use the entire amount hypodermically.

Treatment of Varicose Ulcer.

A powder composed of the following is of great service in treatment of ulcers as result of broken-down varicose veins:

℞ Iodol. .....3iv 16|
Zinci oxidi .....3ii 8|

M. Sig.: Dust freely upon the affected part and apply the dressing, which should be changed every other day.

The following is also recommended under the same circumstances:

℞ Ichthyol .....3i 4|
Gelatini .....3ii 8|
Zinci oxidi .....3i 4|
Glycerini .....3iii 12|
Aq. destil. .....℥ss 16|

M. Sig.: Heat the above and paint on the ulcer, first cleansing the ulcer with an antiseptic solution and drying.

Treatment of Rheumatic Synovitis.

℞ Sodii salicylatis .....3iv 16|
Sodii iodidi .....3iv 16|
Aq. menth. pip. .....℥vi 192|

M. Sig.: Two teaspoonfuls in water four times daily.

The following applied locally will be absorbed:

℞ Methyl salicylatis .....3iv 16|
Lani .....℥ii 64|

M. Sig.: Apply to the affected joint on lint, night and morning.

Proper Method of Bandaging Diseased Breasts.

Harris, in the *Annals of Gyn. and Ped.*, makes the statement that inflammation of the nipple and breast should be regarded as a progressive rather than a self-limited disease, arising in most instances from septic infection of the nipple. Bandaging is regarded by him as advisable after mastitis, stillbirth, and whenever weaning is necessary on account of mammary disorders. It is recommended by him that the bandage be used in cases of infection of both breasts, and where nursing must be entirely stopped. In applying his bandage, when only one breast is involved, he uses a roller bandage two and a half or three inches wide and nine or ten yards in length. Both breasts are protected by absorbent cotton. Beginning beneath the breast affected the bandage is passed twice around the body, then under the affected breast and over the opposite shoulder, then around the body again and underneath the breast and over the same shoulder. It is then brought again under the affected breast and passed around the chest above the sound breast and immediately over the affected breast and above the sound breast and continued until the affected breast is entirely covered, and finally over the shoulder again. It must then be kept in place with safety pins in the back, sides, and front. An opening may be made so that the infant may have access to the sound breast.

Bacon, of Chicago, recommends for supporting the breast and putting it at rest a bandage six or seven inches wide. In applying this bandage the breast must be raised, not compressed; with the patient lying on her back, the bandage under her, the nurse takes hold of one end of the bandage and draws the breast up to the middle of the chest, holding it there with the bandage. The other breast is raised and held in the same way, after which the bandage is fastened by several safety pins, the lower border being drawn more tightly than the upper. Strips of bandage may extend over the shoulders to hold this bandage in place. His method of applying the double Y bandage is more efficient than the one just described. It is made of strong cotton cloth, consisting of a back piece four or five inches wide and from fourteen to twenty inches long. To each end are sewed two diverging strips, each four or five inches wide and thirteen inches long. The lower limbs of the Y's which pass under the breast are fastened together with safety pins; in the same manner the upper and lower limbs of the Y's are fastened in front with safety pins to support the inside of the breasts. With this bandage the nipple of the sound side may be left free for the infant.

Treatment of Pruritus Vulvae.

L. Siebourg, in *Centralblatt f. Gyn.*, states that the removal of causative factors is imperative. An exact uranalysis should be made. The diet should be regulated. Alcohol and highly seasoned foods should be interdicted. Rubbing or scratching of the vulva should be prohibited. The diseased parts should be washed with water and pure soap after each urination. The following should be applied to give relief from the itching:

℞ Cocainæ .....gr. xxx 2|
Orthoformi .....gr. xxiv 1|50
Menthol .....gr. viiss |50
Acidi carbol. .....gr. xv 1|
Vaselini .....3v 20|

M. Sig.: Apply locally to relieve the itching.

Generalized Pruritus.

J. F. Schamberg, in *Ther. Gazette*, recommends the following to be taken internally in cases of chronic pruritus over different parts of the body:

℞ Acidi carbol. .....3ss-3i 2-4|
Glycerini .....3i-3ii 4-8|
Vini xerici, q. s. ad .....℥iii 96|

M. Sig.: One teaspoonful after each meal.

Dr. Schamberg states that he employed the above treatment in several cases of general itching which extended over several months, with improvement in all cases and cure in some of them.

Treatment of Locomotor Ataxia.

Dr. S. Leduc, in *Gazette Médicale de Nantes*, stating that in tabes dorsalis, dependent upon a history of syphilis, has injected into the gluteal region of the patient the following:

℞ Hydrarg. chloridi corros. |
Sodii chloridi (recrystall.) āā .....gr. iii |20
Aq. destil. .....3v 20|

M. Sig.: Inject about thirty drops daily into the thigh.

Sodium Formate in Pneumonia.

Polenov, as noted in *La Semaine Med.*, recommends the following in modifying the fever and shortening somewhat the duration of the illness:

℞ Pulv. adonis vernalis (folia) .....gr. xxx 2|
Aq. bulientis .....℥vi 182|

Ft. infusio. Filter and add:

Sodii formatis .....gr. xxx-3i 2-4|

M. Sig.: One tablespoonful every two hours, day and night.

Sodium formate is a white deliquescent crystalline salt, soluble in water or glycerin.

Pityriasis of Face and Eyebrows.

The following is recommended in treatment of this affection as noted by *New York Med. Jour.*:

℞ Lithii benzoatis .....gr. xv 1|
Tinct. benzoini .....3ss 2|
Glycerini .....3ss 2|
Tinct. eucalypti .....3i 4|
Aq. rosæ .....℥i 32|

M. Ft. lotio. Sig.: Apply locally night and morning.

Medicolegal

Skull and Photograph Admissible in Evidence.—The Supreme Court of Nebraska holds, in Savary vs. State, that when physicians called as experts in a criminal trial for murder, in testifying to the manner and cause of death, refer to and use the skull of the deceased and a photograph thereof in explanation and as a part of their testimony, it is not erroneous to admit the exhibits as evidence in the case.

Proof on Insanity to a "Reasonable Certainty."—The Supreme Court of Georgia says, in Minder vs. State, that in order to sustain the independent defense of insanity at the time of the commission of an alleged criminal act, it is incumbent upon the accused to prove that he was insane at that time; and it holds that an instruction that he must prove this to a "reasonable certainty" is not erroneous, when the jury are distinctly informed that a preponderance of the testimony is all that is requisite to establish such reasonable certainty.

Ground for Annulment of Marriage to a Syphilitic.—While the Court of Chancery of New Jersey says, in the case of Crane vs. Crane, that to annul a marriage for a fraudulent representation inducing the contract, it must be shown that the fraud affected an essential of the marital relation, it holds that an explicit statement by a man about to be married that he was not afflicted by the loathsome disease called "syphilis," made when it was his duty to state the truth, and knowingly false, is such a fraudulent representation as affects an essential of the marital relation, and warrants an annulment of the marriage for fraudulent representation.

Court Terminates Lengthy Malpractice Litigation.—In the late appeal from a judgment for the plaintiff in the malpractice case of Margaret Leach Barker vs. Lane, the Supreme Court of Rhode Island says that the verdict was clearly against the evidence. Whether the defendant used proper professional skill and diligence in treating the plaintiff's arm was a question which must be determined by the testimony of experts in medicine and surgery. A number of these were called, some by the plaintiff and some by the defendant, and they all substantially agreed that the method of treatment adopted by the defendant was professional and proper. Taking their testimony in its strongest light in favor of the plaintiff, it only showed an error of judgment on his part in treating the arm; and such an error, merely, the court holds, is not enough to sustain an action of this sort. Continuing, the court says that the treatment of which the plaintiff complained occurred in 1892, but no action therefor was brought until in 1895. The case has now been tried five times, with varying results; and in 1897 a verdict for the plaintiff was set aside by the court for the same reason that the present verdict is set aside. The declaration has been repeatedly amended, and at least four of the original witnesses are now dead. Then the court adds that it is of the opinion that the plaintiff, after the lapse of nearly nine years, must be presumed to have presented all the evidence which is now available in her behalf, and that the interests of justice will not be subserved by a further prolongation of this litigation. "It concerns the state that there be an end of lawsuits." Wherefore, the Supreme Court remands the case with direction to enter judgment for the defendant.

Communications to Volunteer Physician Privileged.—After a boy who had been injured by a street car was taken to a drug store, one of the surgeons employed by the street car company went in to see him, and volunteered his services to stop the flow of blood until the ambulance arrived. He subsequently saw the boy at the hospital 10 days after the accident. The boy was then in bed in the ward, and the doctor asked him to tell the details of his accident, to which the boy made reply. Now, he certainly, while thus attending to the boy to stop the flow of blood, the first appellate division of the Supreme Court of New York holds, case of Griffiths vs. Metropolitan Street Railway Company, occupied to the boy the relation of physician, and when he subsequently went into the hospital, after the amputation of the boy's leg, and asked him questions as to the accident, the boy was justified in treating him as a physician who had attended him. Continuing, the court says that his going to the hospital, having no previous acquaintance with the boy, no interest in the case except in his professional capacity, and attempting to obtain from him declarations as to the accident, was unauthorized and impertinent. Declarations made by the person thus severely injured, made to a physician under such circumstances, would certainly be privileged. Except as a physician, he had no business in the hospital. He did not inform the boy that he came as a representative of the street railway company, and for the purpose of extracting from him an admission which would tend to relieve the company from liability. Under such circumstances, the boy was quite justified in considering a person who thus addressed him as a physician, and in answering his questions freely and frankly, without considering that his answers would be used against him as admissions. Wherefore, the court holds that the testimony of the physician was correctly excluded, on the trial of the action against the company.

Risks Taken by Patient in Charitable Hospital.—The United States Circuit Court of Appeals, First Circuit, has affirmed, in the case of Powers vs. the Massachusetts Homeopathic Hospital, the decision of the Circuit Court reported on page 899 of THE JOURNAL of Oct. 6, 1900. In other words, it holds that a patient admitted to a hospital maintained for charity can not recover judgment against the hospital for injuries caused by the negligence of a nurse employed therein. It considers it immaterial, too, that the patient in this case was what is sometimes called a "paying patient." That the ministrations of a hospital organized as a charitable corporation, that is, exclusively for charity, should be confined exclusively to the indigent, it says, is not usual or desirable. Those of moderate means from necessity, and not a few rich people from choice, resort to great charitable hospitals for treatment, especially in surgical cases. Throughout the world this is the custom in these institutions, whether they are maintained by individual, religious, or municipal charity. From patients who are not indigent, a payment is commonly permitted or required. Commonly, this payment does not make full pecuniary compensation for the services rendered. Those who make a considerable payment not infrequently receive in some respects a more expensive service than do those who make a small payment or none at all; but the payment required is usually calculated upon the patient's ability to pay, rather than upon the whole cost of the treatment he receives. That was plainly the rule of the hospital in this case, and the court is of the opinion that a paying patient in it, as well as a non paying patient, seeks and receives the services of a public charity. That such a hospital in its treatment of a rich patient should be held to a greater degree of care than in its treatment of a pauper is not to be tolerated. Certain luxuries may be given the former which the latter does not get, and this for various reasons; but the degree of protection from unskilled and careless nurses must be the same in both cases. Again, the court says, it would be absurd to make the hospital's liability for an accident, such as the burning of a patient with a hot water bag, depend upon the payment of that insignificant proportion of the cost of the service rendered which in some cases may properly be required from a poor man or woman. So the court is of the opinion that this case stood as if the patient had been admitted without any payment whatsoever, instead of with an agreed one of $14 a week. Then it holds that one who accepts the benefit either of a public or of a private charity enters into a relation which exempts his benefactor from liability for the negligence of his servants in administrating the charity; at any rate, if the benefactor has used due care in selecting those servants. To paraphrase the illustration used by the Circuit Court, it would be intolerable, it says, that a good Samaritan, who takes to his home a wounded stranger for surgical care, should be held personally liable for the negligence of his servant in caring

for that stranger. Were the heart and means of that Samaritan so large that he was able, not only to provide for one wounded man, but to establish a hospital for the care of a thousand, it would be no less intolerable that he should be held personally liable for the negligence of his servant in caring for any one of those thousand wounded men. And the court can not perceive that the position of the hospital in this case differed from the case supposed. The persons whose money has established it are good Samaritans. The purity of their aims may not justify their torts or wrongful acts, but, if a suffering man avails himself of their charity, he takes the risks of malpractice, if their charitable agents have been carefully selected.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), September 21.

1 *The Significance and Treatment of Floating Kidney in Women. Henry D. Beyea.
2 *Wounds of the Thoracic Duct Occurring in the Neck; Report of Two Cases; Résumé of Seventeen Cases. (Concluded.) Dudley P. Allen and C. E. Briggs.
3 The Practical and Scientific Value of the Blood Examination to the Medical Man and Surgeon. (Concluded.) Robert N. Willson.
4 *The Therapeutic Value of Alcohol. Leon L. Solomon.

New York Medical Journal, September 21.

5 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
6 *The Clinical Diagnosis of Carcinoma of the Esophagus and the Technics of Gastrostomy. (Concluded.) Charles G. Cumston.
7 A Study of the Temperature, Pulse, and Respiration in the Diagnosis and Prognosis of Certain Diseases of the Brain. (Continued.) J. T. Eskridge.
8 Conjunctivitis from X-rays; Incipient Retinitis Apparently Due to the Same Cause; Report of a Case. J. W. Sherer.

Medical Record (N. Y.), September 21.

9 *Pathological Physiology of the Animal Heat Economy and Its Relation to the Modern Theories of Fever. Isaac Levin.
10 Foreign Bodies of the Nose and Ear. Percy Fridenberg.
11 *Some Ultimate Results of Gunshot Wounds Caused by the Mauser Bullets During the Late Spanish-American War. Medwin Leale.
12 *A New Operative Procedure for Treating Inflammation of the Posterior Part of the Eye. S. Busby Allen.
13 *The Disadvantages of Copper Sulphate in Diseases of the Conjunctiva and Cornea. Cornelius Williams.

Philadelphia Medical Journal, September 21.

14 *The Deleterious Results Following Operations in Hypochondriasis, Performed for the Sake of Mental Impression. A. Pick.
15 *Concerning the Treatment of the Apparently Unaffected or at Most but Slightly Involved Eye in Cases of Glaucoma. G. E. de Schweinitz.
16 *An Improved Lantern for Detecting Color-Blindness, to Supplement the Deficiencies of the Wool Tests. William Thomson and Archibald G. Thomson.
17 *Light and Radiance in the Treatment of Disease. George G. Hopkins.
18 *Discussion on the Therapeutic and Diagnostic Value of Tuberculin in Human Tuberculosis. G. A. Heron.

Boston Medical and Surgical Journal, September 19.

19 *The Use of Gynecology by the General Practitioner. (Concluded.) Edward Reynolds.
20 *Movable Kidney; with Special Reference to Its Consequences and Its Etiology; with the Report of Postmortem Observations Made by the Writer in Some Cases of Movable Kidney. Francis S. Watson.
21 *A New Factor in the Etiology of Visceral Ptosis: The Relation of the Modern Corset to This Factor; a Prelimipary Communication. Agnes C. Vietor.
22 *The Home (Sanitarium) Treatment Versus the Climatic Treatment of Consumption. Vincent Y. Bowditch.
23 *Eosinophiles as Constituents of Pus. Edward T. Williams.

Medical News (N. Y.), September 21.

24 The Case of the President.
25 *Disappearing Tumors. A. S. Warthin and W. A. Spitzley.
26 *The Dilatation of the Cervix Uteri in Obstetric Practice. Henry J. Garrigues.
27 The Pantherapist and Neotherapeutics. C. H. Kermott.
28 A Case of Double Penis, Combined with Exstrophy of the Bladder and Showing Four Ureteral Orifices. Carl Beck.
29 A Case of Congenital Abscence of Internal Genitals; Fusion of Kidneys; Single Ureter. Allen J. Smith and William Gammon.
30 *A Few Remarks on a Generally Unrecognized Ear Disease (Otitis Media Mucosa). Henry A. Alderton.
31 The Local Treatment of Gonorrhea. E. O. Bardwell.

Cincinnati Lancet-Clinic, September 21.

32 *The Practice of Obstetrics—As It Is and as It Should Be. E. Gustav Zinke.
33 *Position of the Woman During Delivery. Wm. D. Porter.
34 Dermoid Cysts of the Ovary. John A. Grafft.

St. Louis Medical Review, September 21.

35 The Progress of Surgery. Frank L. Lutz.

Medical Fortnightly (St. Louis), September 10.

36 The Anatomy and Function of the Ovary and Some of Its Diseases. Herman E. Pearse.
37 Beri-beri in the Japanese Army. Albert S. Ashmead.
38 Disease of the Stomach. (Continued.) J. M. G. Carter.

Virginia Medical Semi-Monthly (Richmond), September 13.

39 Some Observations Made in Handling Recent Epidemics of Smallpox. J. W. Preston.
40 Suprapubic Cystotomy, with a Report of a Successful Operation Under the Influence of Local Anesthesia with Schleich's Solution. C. G. Cannaday.
41 Report of a Case of Subcutaneous Injection of Paraffin. Junius F. Lynch.
42 Case of Twin Conception; Almost Painless Miscarriage of One Foetus at Seven Months; Other Child Born at Term; One Placenta. J. Prosser Harrison.
43 Medical Treatment of the Diseases of the Kidney. J. N. Upshur.
44 Surgical Interest of the Sub-peritoneal Tissue. Hugh M Taylor.
45 *Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.

American Practitioner and News (Louisville, Ky.), July 15.

46 *The Practical Management of Smallpox. M. K. Allen.
47 *Tuberculosis of the Testicle and Epididymis. Irvin Abell.
48 Report of a Unique Case of the Loss of Beard and Hair J. R. Clarke.
49 Mitral Regurgitation Produced by the Efforts at Resuscitation in a Partially Asphyxiated Newborn Babe: Report of a Case. Leon L. Solomon.

Medical Age (Detroit, Mich.), September 10.

50 Differentiation of Valvular Cardiac Murmurs. Frank C. Wilson.
51 The Relationship Between Ocular Affections and Systemic Diseases. Frank H. Edsall.
52 The Care of the Aged. Ewing Marshall.

Annals of Gynecology and Pediatry (Boston) September.

53 Studies in the Normal and Pathological Structures of the Ovary. Mary Dixon Jones.
54 Tuft's College Medical School. A. J. Paine.
55 Sanitation of Cuba. A. Bustillo Lirola.

Cleveland Journal of Medicine, August.

56 Acute Anterior Poliomyelitis in the Adult. D. I. Wolfstein.
57 Psychoses of Influenza. Henry S. Upson.
58 Psychoses of Influenza. Robert E. Ruedy.
59 The Cardiac Lesions of Influenza. L. W. Ladd.
60 A Case of Traumatic Rupture of the Spleen. A Case of Gunshot Wound of the Spleen. C. A. Hamann.
61 A Case of Traumatic Tetanus. C. F. Douglass.
62 Report of a Case of Paralytic Club-Foot. Walter G. Stern.

Medicine (Chicago), September.

63 *Chorea; Especially in Relation to Rheumatism and Endocarditis. H. B. Favill.
64 Some Functional Manifestations. Edward B. Taylor.
65 *Is Bovine Tuberculosis Dangerous to Man? E. Fletcher Ingals.
66 Aneurysm of the Recurrent Type. R. B. Preble.

New York State Journal of Medicine (N. Y.), September.

67 The Technic of Aseptic Abdominal Operations. Parker Syms.
68 *Progressive Pernicious Anemia. Alfred Stengel.
69 *Some Remarks on the Pathology and Surgical Treatment of Urinary and Uro-Genital Tuberculosis. Samuel Alexander.
70 Tuberculosis of the Bones and Joints. E. H. Nichols.
71 *Puerperal Sepsis; Its Pathology and Treatment. William R. Pryor.
72 Report of Two Cases of Intraspinal Cocainization in Puerperal Eclampsia. Wm. P. Thornton.
73 *Strabismus and Its Management. J. H. Woodward.
74 The Value of Blood Examination in Appendicitis. Albert E. Woehnert.

Brooklyn Medical Journal, September.

75 City Versus Independent Hospitals. Jesse T. Duryea.
76 The Advantage to the Public and the City of the Non-Municipal Hospital. John Harrigan.

77 Church Hospitals. A. C. Bunn.
78 Asthenopia. Heber Nelson Hoople.
79 Interdental Splint for Fractures of the Jaw. J. W. Russell.
80 La Grippe in Children. (To be continued.) W. L. Chapman.
81 Another Plan of State Care for the Insane. W. H. Haynes.

Annals of Ophthalmology (St. Louis), July.

82 *On the Measurement of the Interocular Base Line and the Size of the Meter Angle. Lucien Howe.
83 Carcinomatous Degeneration of a Papilloma of the Conjunctiva with Infiltration of the Eyelids. S. D. Risley and E. A. Shumway.
84 Glioma of the Retina Without Sequelæ. M. W. Zimmermann and Burton K. Chance.
85 *A Case of Tuberculosis of the Conjunctiva. Howard F. Hansell.
86 Clinical Notes on Six Cases of Albuminuric Retinitis. Albert R. Baker.
87 *The Surgical Treatment of Entropion and Trichiasis. Matthias L. Foster.
88 Three Cases of Alcohol-Tobacco Amblyopia Presenting Retinal Hemorrhages. William Zentmayer.
89 Hemorrhage of the Retina. G. Griffin Lewis.

Medical Bulletin (Philadelphia), September.

90 Lupus Vulgaris and Psoriasis. John V. Shoemaker.
91 Aural Pyemia with Dermatomyositis, Without Apparent Thrombophlebitis of the Sinus. L. Bar.
92 Botanical Nomenclature. T. G. Stephens.

Archives of Pediatrics (N. Y.), September.

93 *Pernicious Anemia in Infants, with a Preliminary Report of a Case. T. M. Rotch and Maynard Ladd.
94 *So-called "Cyclical Albuminuria," with Preliminary Report of Case. Frank S. Churchill.
95 *Probable Etiology of Rectal Polypi in Children. Francis Huber.
96 *Lamellar Desquamation in an Epidemic of German Measles or of "Fourth Disease." Frederick T. Simpson.
97 A Case of Chronic Arsenical Poisoning in an Infant of Seven Months. John L. Morse.
98 Pleural Effusion. James Carmichael.

Kansas City Medical Record, September.

99 Bacteria and the Part They Play in Disease. Jos. Clements.
100 Over-Feeding as an Etiologic Factor in the Production of Diseases of the Liver. John W. Kyger.
101 Alkaloidal Medication, What Is It? J. Robt. Buchanan.

Medical Dial (Minneapolis), September 1.

102 An Investigation of a Pathogenic Microbe as Applied to the Destruction of Rats. M. J. Rosenau.
103 Sterility in Women. Lewis S. McMurtry.

Journal of Nervous and Mental Diseases (Nyack, N. Y.), September.

104 *A Clinical Classification of Insanity. F. X. Dercum.
105 Dislocation of the Seventh Cervical Vertebra; Clinical History of a Case; Remarks. Frank R. Fry.
106 Three Cases of Hereditary Chorea. C. Eugene Riggs.

New Yorker Medicinische Monatsschrift, August.

107 Zur Erkenntniss und Behandlung der Fruhseitigen Berstung bei Eileiterschwangerschaft, mit betrachtlicher Blutung. H. Banga.
108 Ueber die Bekampfung der Tuberculose. Robert Koch.

Medical Summary (Philadelphia), September.

109 Deafness. Edwin W. Pyle.
110 Synovitis. J. L. Wolfe.
111 Little Things That Should Be Observed by the Physician. C. W. Canan.
112 Cancer and Its Cure. Wm. A. Armstrong.

Cleveland Medical Gazette, September.

113 Opinions in Relation to the Questions of the Special Committee of the American Medical Association Regarding the Prognosis and Treatment of Acute Gonorrhea in the Male. Professor Neisser and E. C. Burnett.
114 Two Cases of Syphilis: One with Very Persistent Lesions, the Other Congenital, Without Any Known Lesions in Immediate Family. D. S. Hanson.
115 Remarks on Pelvic Cellulitis. Byron Robinson.
116 Review of Pathological Work at City Hospital for the Past Six Months, with Presentation of Specimens. H. C. Crumrine.
117 Is It Justifiable to Enucleate During the Acute Stage of Panophthalmitis? Edward Lauder.

Dominion Medical Monthly (Toronto), August.

118 Medical Inspection of Schools and the Prevention of Spread of Contagious Diseases. D. Forsyth.
119 The Difficulties in the Diagnosis of Variola. E. R. Secord.
120 On the Importance of an Early Recognition of Locomotor Ataxia—Do the Eye Symptoms Assist Us? J. T. Duncan.
121 A Case of Acute Endocarditis. R. D. Rudolf.

Toledo Medical and Surgical Reporter, September.

122 *How Shall We Treat Convulsions in Children? Wm. A. Dickey.
123 Stomach Washing in the Indigestion and Gastritis of Infants. Report of Five Cases. W. H. Emery.

Maryland Medical Journal (Baltimore), September.

124 *Blood Examinations as an Aid to Surgical Diagnosis. Joseph C. Bloodgood.

Medical Council (Philadelphia), September.

125 *Briefs on the Surgery of the Genito-Urinary Organs. G. Frank Lydston.
126 Disorders of the Sexual Function in Man. A. H. P. Leuf.
127 The Treatment of Alcoholism. John L. Howard.
128 *The Use and Abuse of Narcotics and Hypnotics, with a Clinical Study of a New Hypnotic. W. H. Walling.
129 Case of Tetany in Which Autopsy Revealed Dilated Stomach as a Cause. Ira B. Ladd.
130 Intestinal Antiseptics. W. H. Baldwin.

Columbus Medical Journal, August.

131 Constipation in Infancy and Early Childhood. J. M. Dunham.
132 Some of the Emergencies of Labor and How to Manage Them. Edward J. Wilson.
133 Scarlet Fever. C. C. Ross.
134 Placenta Previa. H. L. Harris.

Laryngoscope (St. Louis), August.

135 *The Nose and Throat in the History of Medicine. (Continued.) Jonathan Wright.
136 *Subarachnoid Injection of Cocain as a General Anesthetic for Operations upon the Head. Redmond Payne.
137 A Variation in the Technique of Septum Operations. Stephen H. Lutz.
138 Papillomatous Growths of the Soft Palate. Wm. F. Dudley.
139 Traumatic Dislocation of the Left Arycartilage. Henry L. Wagner.
140 Improved Portable Apparatus for Heating and Sterilizing Compressed Air. Charles L. Enslee.

Carolina Medical Journal, (Charlotte), August.

141 The Physician and the Public. F. Julian Carroll.

Georgia Journal, of Medicine and Surgery (Savannah), August.

142 Acromegalia. T. L. Cornwell.
143 *Otorrhea—"A Rising in the Head." Wm. Lewis Bullard.
144 Subarachnoid Spinal Cocainization as a Means of Inducing Surgical Anesthesia. Edward N. Liell.
145 Report of Case of Compound Fracture of Lower Jaw. P. R. Cortelyou.
146 Sulphate of Quinin as an Ecbolic. O. B. Bush.
147 An Unusual, and Probably Unique, Complication (General Emphysema) of Tracheotomy. E. C. Ellett.

International Journal of Surgery (N.Y.), September.

148 Practical Suggestions upon the Treatment of Rectal Diseases. James P. Tuttle.
149 Who Shall Operate? A. C. Helm.
150 Nose and Throat Work for the General Practitioner. (Continued.) Geo. L. Richards.
151 The Operative Treatment of Carcinoma of the Breast—Its Possibilities and Limitations. William F. Campbell.
152 Regional Minor Surgery. (Continued.) George G. Van Schaick.
153 Tubercular Meningitis; Gastro-enterostomy; Benign Tumor of the Breast. William L. Rodman and E. B. Gleason.
154 A Case of Uterine Polypi and Its Treatment. Edmond J. Melville.

Medical Review of Reviews (N. Y.), August 25.

155 The Etiology of Cystitis. William K. Otis.

New England Medical Journal (Danbury, Conn.), September.

156 The Progress and Tendency of Hygiene and Sanitary Science in the Nineteenth Century. (Continued.) George M. Kober.
157 Thialion—Its Therapeutic Indications with Clinical Reports. C. W. Canan.
158 Climate for Health. Paul Paquin.
159 Phospho-therapy and Nerve-exhaustion. S. Green.

Southern Illinois Journal of Medicine and Surgery (Metropolis), August.

160 Malarial Fevers—Their Clinical Aspect and Diagnosis. C. E. Riseling.
161 Nervous Complications in Acute Diseases. H. P. Sights.
162 A Case of Nephritis—One of My Failures. O. B. Ormsby.
163 Puerperal Eclampsia, with Report of Cases. D. W. Grear.

Mississippi Medical Record (Vicksburg), September.

164 Strangulated Hernia; Report of Two Cases. Louis D. Dickerson.
165 The Transmission of Yellow Fever. H. H. Haralson.
166 Edema of the Lower Extremities: Chronic Malaria. Frank C. Wilson.

AMERICAN.

1. **Floating Kidney.**—The operation here described by Beyea is as follows: A longitudinal incision is made in the lumbar region parallel with and about 4 fingers' breadth from the spinous process of the vertebra, thus close to the anterior border of the spine muscles. It begins just below the last rib and extends downward for a distance of 3½ inches. The skin and fat are divided down to the fascia, the fascia incised, the muscles separated in the direction of their fibers, cutting again through the lumbar fascia and separating the quadratus lumborum muscle. The perirenal fat is exposed and is likewise excised, opening the space of Gerrotta. Then by rolling the patient downward on the Edebohls inflated bag, assisted often by traction of the perirenal fascia and the pressure of the assistant's hand opposite to the incision on the anterior abdominal wall, the kidney is delivered out of the wound. The surgeon then selects a position at the hilum of the kidney in the perirenal fascia which is free from blood vessels, and about one centimeter from the ureter and renal vessels, which he perforated with the blunt end of a dissecting forceps. Then an ordinary rubber drainage tube, previously sterilized and of sufficient length to surround the kidney and protrude for some distance out of the wound when the kidney is replaced, is introduced through this opening made with the forceps and clamped. Similarly, a second tube is introduced below the ureter and vessels and surrounding the kidney. The drainage tubes being surrounded by and passing through an opening in the perirenal fascia at the hilum, are prevented from changing their position and slipping over the convex end of the kidney, or in any way from interfering with the ureter or vessels. The kidney is then replaced, the drainage tubes extending through the incision. The muscle incision is sutured, leaving a small opening for the tubes, with continuous catgut suture, often by two layers of such suturing. The skin wound is closed by an intracutaneous suture, again leaving the same opening. An oblong portion of gauze is now placed over the wound, and over this, with gentle traction, are tied the elastic drainage tubes. The tubes, being elastic and tied with little tension, the kidney tissue can not be restricted or its circulation interfered with. The kidney is secured a little below the normal, and in the most favorable position. The usual dressing and binder are placed over the wound. The first dressing is made at the end of ten days, the silk intracutaneous suture being removed at this time. The tubes, which easily slip out, are removed after three weeks. The wound left by them quickly heals, being completely closed within three or four days. The operation was first planned and practiced by C. B. Penrose and has been performed in eight cases. All the patients have been carefully examined and the kidney found fixed in these, and in all but one the symptoms were entirely relieved. In this one case the patient still suffers from gastroptosis, which it is hoped will be relieved by further operation. After two and one-half years Beyer is thoroughly convinced that the operation can have no deleterious influence and is associated with no danger, and, therefore, in the future will be the operation of election in nephropexy. The rubber tubing, if aseptic, acts simply as a foreign body, causing very mild irritation and never producing excessive adhesions to injure the kidney structure, but just enough to hold the kidney in a fixed position, and the tube tracks heal with the smallest cicatrix.

2. **Thoracic Duct.**—In the former portion of this article appearing in the last number of *American Medicine*, Allen and Briggs described some theoretical and practical questions in regard to thoracic duct injuries and report a number of cases. In this article they give a more detailed study of these cases and offer the following as suggestions to which they have been led: 1. The increasing frequency of extensive dissections in the neck makes it desirable to consider means of avoiding injury to the thoracic duct. 2. It is desirable that if wounds of the thoracic duct or its branches occur, they should be recognized at the time of operation. The ingestion of 4 to 6 ounces of cream 3 hours before operation might be especially desirable in secondary operations undertaken for the purpose of locating the point of injury. The desirability of such a procedure may be further studied by observations made upon animals. 3. That suture of the duct with fine silk or catgut be accomplished where possible; that all small discharging lymph radicles be ligated; that the ligating and clamping of lymphatic vessels of considerable size be avoided, unless the integrity of the thoracic duct itself has been demonstrated; that where suture of the duct or large radicles is impossible, gauze packing, firmly and accurately applied, be used; that the head and neck be kept at rest, the use of morphin to a considerable degree being recommended if necessary. 4. That until repair of the duct is thought to be complete, nutrition should be sustained on albuminous material, with possibly a small amount of carbohydrates, but with an absolute exclusion of fats.

4. **The Therapeutic Value of Alcohol.**—Solomon's article considers alcohol as a medicine, not as a beverage, which he says does not concern us in this discussion. The healthy man does not need alcohol any more than he needs any other stimulant or narcotic and Lawson Tait's statement that a moderate use of alcohol is a necessity in modern times is too bold and in bad taste from a medical man, and dangerous since it comes from so high an authority. He thinks it should be given tentatively, never as a routine medicine. Alcohol is of value as a stimulant, as a conservator of vital power, for supporting the vital powers of life in sudden depression and supplying heat to the system where it is needed, in chronic suppuration and wasting diseases, and locally in many affections.

5. **The Lane Lectures.**—In the second lecture Morris gives an interesting account of the discovery of itch mite, and points out, however, that it had been recognized by early writers, even by Rabelais, though its discovery for practical purposes dates from the early part of the 19th century. While it is a trivial affection of the present day, cured by one or two treatments, it has been a scourge in the past when it was not understood and he gives an account of Napoleon's experience and calls attention to the fallacy of the fear of driving in an eruption which is not completely exploded at the present day. As regards lice, he remarks that these seem to have their preference; for instance, the experiment of Crocker of a half a dozen students around a table on the middle of which was placed a hungry pediculus; in whatever direction the insect was headed, it always promptly made for one particular student. The lowered condition of the system favors their development and the most exquisite dandy who goes to war, where the toilet has to be more or less neglected, will find himself a victim. He remarks on the progress of personal cleanliness in modern times, calling attention to Lady Mary Wortley Montagu, who was a beauty as well as a wit, and had lived in the East where the bath was a religious institution. Yet it is told that, on someone venturing to hint that her hands were not quite up to the not very high standard of cleanliness required by society in those days, exclaimed: "Do you call that dirty? What would you say if you saw my feet?" At the present time, he thinks it is possible we carry the cult of bath a little too far. The flesh brush may be overused and an irritable condition of the skin produced, but he does not recommend the maxim attributed to a German professor that "dirt is a natural protection to the skin" as a precept of cutaneous hygiene.

6. **Carcinoma of the Esophagus.**—Cumston's article, which was commenced in an earlier number, discusses the subject of esophageal carcinoma of which he recognizes five principal types: 1. The classical simple type without complication, showing itself largely in difficulty in swallowing. 2. The tracheo-bronchial type, producing compression, dyspnea, ulceration, etc. 3. The laryngeal, where it extends to the mucous membrane, muscle and cartilage of the larynx producing similar symptoms. 4. The pulmonary type of disease extending to the lungs and involving the pneumogastric. The cardiovascular form involving the heart and producing dilatation of the aorta and finally perforation of the large vessels. It may also extend to the pericardium, and the heart itself giving rise to various cardiac symptoms, those of pericarditis and endocarditis. He mentions briefly two symptoms of esophageal carcinoma, viz., the laryngotracheal pulsations, first described by Castellino, and unequal pupils, observed by Hitzig. The

clinical value of this latter symptom is small as it may occur in other conditions. The methods of diagnosis are noted—auscultation, catheterism of the esophagus, esophagoscopy, and the use of the Roentgen rays. In conclusion, he describes at length the operation of gastrostomy.

9. **Animal Heat.**—The conclusions derived from Levin's study of the heat economy and of fever are as follows: Heat economy seems to resemble general metabolism inasmuch as it is a result of the joint work of many organs of the body; and fever, the most important pathological state of heat, is in most instances a special kind of intoxication by some substances not as yet well defined. Further work will have to show the precise nature of these substances, and also decide the question whether there is some central apparatus conducting all the complicated works of the heat economy, and what the nature and office of such an apparatus are, if it does exist. He is inclined to believe that later researches seem to show that fever is not always deleterious; it is sometimes beneficial to the economy, though the question is by no means settled, but the truth must certainly lie somewhere between the two extremes. An ordinary febrile temperature does no harm as a rule, often probably does some good. The doctrine, therefore, that every rise of temperature must be fought against and reduced by all means is wrong, since none of the metabolic and other changes accompanying fever is in any way influenced by antipyretics.

11. **Gunshot Wounds.**—The late results of gunshot wounds are elaborated in some thirteen cases of injury from the Mauser bullet examined by Leale, and who finds that they are far less severe from modern projectiles than from those formerly used, and that the change to the use of the small bore rifle has proven to be a great blessing in modern warfare.

12. **Postero-Ocular Hot Water Injections.**—Allen suggests that in case of neuroretinitis involving the retina and choroid, this might be treated by hot-water injections applied to the posterior portion of the eyeball and optic nerve and by adding sodium chlorate to the water sufficient to raise its specific gravity higher than that of the blood, we have all the conditions for osmosis. He has experimented on rabbits to see whether pathologic changes follow the operation and after performing his operation says it caused no serious traumatism, that no change has taken place in the eye or any of the media in these animals.

13. **Copper Sulphate.**—The use of copper sulphate in diseases of the conjunctiva and cornea is condemned by Williams, who concludes as follows: 1. Copper sulphate in ocular affections is maleficent in its effects. 2. Any good effect following the application of the solid copper sulphate in any disease of the eye may be obtained with the use of safer and practically painless means. 3. Trachoma is most successfully treated with weak solutions of silver nitrate, together with frequent irrigation with a weak bichlorid solution in normal salt. 4. No application to an inflamed conjunctiva which produces a lasting pain should be countenanced. 5. Expression is not absolutely essential, yet much hastens the cure of trachoma. 6. A mydriatic should be used in every disease of the eye involving corneal lesions. 7. Copper has ruined more eyes than it has ever benefited.

14. **Hypochondriasis.**—The evil effect of operations performed on account of the delusion of hypochondriasis to aid the mental condition are pointed out by Pick and he gives several instances illustrating his views. In the first part of the past century such operations were recommended and common, and he thinks that these methods are not as yet entirely discarded. His paper is, therefore, a warning against their repetition.

15. **Glaucoma.**—The method of treatment of the unaffected or slightly affected eye in glaucoma is discussed by de Schweinitz, who offers the following conclusions, as suggested by a consideration of the subject: 1. In cases of acute glaucoma the apparently unaffected eye should be operated upon as soon as the anterior chamber is restored in the opposite eye; that is to say, as soon as the wound is closed, provided the history of the case or an examination of the eye furnishes indications already described that it is likely to suffer a glaucomatous attack like its fellow, especially if the patient is so situated that he or she will pass from observation and from the resources of expert examination. 2. In cases of chronic congestive glaucoma the same line of advice applies, and the operation is to be urged if clear information can be obtained that the apparently unaffected eye has suffered attacks of nebulous or iridescent vision, associated with increased intraocular tension. 3. In cases of chronic simple glaucoma, if any periods, however temporary, of increased intraocular tension can be demonstrated according to the methods already suggested, operation should be performed even if central and peripheral vision are perfectly intact. Even when these are normal, careful perimetric examination may reveal a scotoma of the character already described; if so, operation should not be postponed. 4. In cases of absolute glaucoma the same line of advice expressed under Nos. 1 and 2 is applicable.

16. **Color-Blindness.**—William and Archibald Thomson describe the model of a lantern devised by them for the detection of color-blindness, which they think meets certain needs not entirely met by the ordinary tests, especially by the too great reliance on the wool test, the unreliability of which has been pointed out by Edridge-Green and others. They give reports of several cases which show the defects from dependence upon this method alone. They are now of the opinion that with the use of colored lights, a non-professional examiner can do good work, and the use of the lanterns here described reveals color-blindness without doubt, and with prominence and certainty.

17. **Light Treatment.**—The treatment of pulmonary tuberculosis by light is discussed in this second paper by Hopkins, who has used a 50-ampere electric lamp with a 20-inch condensing lens, and has had this arranged with an adjuster so that at a distance of 15 feet the light could be concentrated on a surface an inch in diameter if it should be desired. In using this lamp, a screen made of strips of blue glass is interposed between the patient to cut off some of the heat rays. The chest of the patient is bared and the light concentrated to a circle from fifteen to twenty inches in diameter, according to the tolerance of the patient. The exposures vary from half an hour to an hour daily. The first effect of the light observed is the diminution of cough and the temperature within forty-eight hours. In most cases the temperature is down to nearly normal within the first week of treatment. The effect is judged largely by the gain in weight. In every case the amount of expectoration is perceptibly diminished and the number of bacteria is reduced in the first week of treatment. The effect on the appetite is always marked from the very first. He has treated eleven cases in all and his success warrants its continuance. He cautions in regard to exposure to cold without careful protection for some hours after taking the treatment, for fear of overtaxing the kidneys, and advises also careful examination of the urine in every case where the treatment is being given.

18. **Tuberculosis.**—Heron is a strong advocate of tuberculin in tuberculosis and reports his experience. He thinks it is as safe as any other potent drug. He, however, reports the case of a girl in whom it seemed to act very badly, though only a very small quantity was given. There is a question as to the case being tuberculosis, which he thinks improbable as there was no reaction, and he believes that the death was not due to tuberculin.

19. **Gynecology by the General Practitioner.**—The history of gynecology in this country is first given by Reynolds in an article appearing in the previous number of the *Boston Journal*, in which he calls attention to the fact that gynecology is not exclusively a surgical subject and to the necessity of correct diagnosis. The physician should look after the physical state of the pelvic organs, investigate the diathesis, uric acid, etc., and pay careful attention to the symptomatology. In this number he calls attention to the psychologic side of the evils due to imperfect methods in investigating the cases, false modesty, and to proper instruction in regard to the dangers of gonorrhea and syphilis in men as an element of pre-

ventive medicine. The evils of corsets for young girls are also mentioned and the necessity of repairing lacerations and other injuries incident to parturition before the climacteric period. The importance of looking after cancerous and irritative symptoms, ovarian and renal troubles in women, especially cystitis, and physical examination of the urinary organs which is too often neglected are emphasized.

20. **Movable Kidneys.**—Watson announces that the object of his paper is first to protest against the view that movable kidney is originally a harmless condition, to determine its essential etiologic factors and to record certain postmortem observations that suggest an explanation of certain severe symptoms. The frequent presence of movable kidney in neurasthenia would indicate that it had a connection with that condition. There are other more serious consequences; among these are: 1. Hydro- and pyonephrosis. 2. Abnormal fixation of the kidney. 3. In rare instances gangrene of the organ caused by occlusion of its blood vessels by twisting. As regards hydro- and pyonephrosis he quotes Gigon, Albarran, Tuffier and others, and reports cases of the second difficulty, abnormal fixation of a previously movable kidney. The etiologic factors are discussed at length and the author considers that movable kidney results from a defect in the perirenal structures, fascia, etc., described by Glantenay and Gossett, with the possible influence of the shape and size of the paravertebral fossa in which the kidneys lie beneath the diaphragm. He reports cases in conclusion where the fibrous tissues from the peritoneum had restricted the movements of the kidney, causing a partial twist of the ureter and accounting for the occasional acute attacks of pain.

21. **Visceral Ptosis.**—The special influence of corsets in the etiology of visceral ptosis are treated of in this preliminary communication of Vietor's, and she recapitulates the essential points of the helpful corset for visceral support: A straight front, made of several sections running from below obliquely upward and backward; hip gores; back gores; fit the abdomen first, and from below upward; then fit the chest; leave the waist as it falls into place. The patients should be specially warned that it is not enough to have a straight front, but that there must be room in the back for an oblique pelvis. She lays stress on leaving the middle lacing absolutely alone, merely tying the ends for tidiness.

22. **The Home Sanatorium Treatment of Tuberculosis.**—Bowditch favors the erection of sanatoriums for the treatment and cure of consumption wherever the disease prevails, and doubts if we are yet in a position to judge fairly as to the relative results obtained by sanatoriums in different climates. He thinks, however, at present, perhaps better results can in all probability be obtained from this form of treatment in the Western rather than the Eastern section of the country.

23. **Eosinophiles.**—Williams has studied the eosinophiles in pus and has found them in every specimen examined. He believes that they are not to be regarded as a specific cell, but purely a pathologic one resulting from a natural, alkaline decomposition of the body of a common leucocyte. The eosinophile is a necrotic cell.

26. **Dilatation of the Cervix.**—The different methods of dilatation and their indications are noticed by Garrigues. He mentions painting the cervical portion with cocain, chloral hydrate, antipyrin, etc., the tamponade and manual dilatation by Harris' method of introducing the index finger and massaging with it and that of Bonnaire; either of which are preferable to the old pressure with the cone-shaped hand, which is likely to cause tears, and by hard dilating instruments, which are even more objectionable. Bags filled with fluid are of indisputable value, but are not without their drawbacks; they are apt to provoke too rapid and violent labor pains, favor prolapse of the cord and may push the presenting part away from the brim. Cervical incisions are also mentioned, but are not to be compared with comparatively bloodless dilatation by the hands or instrument.

30. **Otitis Media Mucosa.**—Alderton calls attention to a generally unrecognized ear disease which seems to occur with relatively more frequency in adults and usually following a severe cold, producing first, sometimes earache yielding quickly to the ordinary remedies, but more often tenderness around the auricle, with hardness of hearing, tinnitus, mental embarrassment and distress and sometimes vertiginous attacks. The aurist, who is generally consulted early, finds but little congestion and no swelling in the external ear. The tympanic membrane is seemingly in about its usual position, possible pushed out a little more than normal, the luster is gone, the surface has a dull gray, leaden appearance. Surrounding this dull gray field is a ring of congestion, and coursing across the field are a number of separate capillary twigs. There is no fluid line discernible, nor can the pressure of fluid be made out by any difference in the appearance of the various sections of the drum membrane. Functionally, the ear is apparently very gravely involved. Examination of the nasopharyngeal cavities shows an active or retrogressing inflammatory process. The pulse and temperature are comparatively normal. Such a condition may endure from a week up to years, with apparent remissions. Incision of the drum gives exit to no secretion or only to a little. The drum membrane is often so thick and fibrous that considerable force is necessarily exercised. But on forcible inflation the picture is changed. Then there appears in the canal a quantity of stringy, tenacious mucus which follows the cotton on the applicator on its withdrawal from the canal as a long, filamentous string. Repeated and forcible inflations are often necessary to evacuate the drum cavity. After the removal of this exudate the hearing is decidedly improved and remains so until the incision heals and more mucus is formed. Douching of the external ear seems never to do anything but harm. Periodical inflation with treatment of the nasopharynx will in some cases bring about a slow recovery, but the patient usually is too impatient to wait for this, and permanent impairment occurs from inspissation of exudates or the formation of adhesions. The treatment he advises is incision and evacuation of the tympanum, repeated if necessary, always accompanied by regular Politzerization and conscientious treatment of the nasopharyngeal condition. Before the incision, the external auditory canal should be made as nearly aseptic as possible and the nasopharyngeal cavities thoroughly cleansed. After the membrane has been removed, the canal is packed with gauze and a mild astringent application made to the post-nasal mucous membrane. The patient must be seen in from twelve to twenty-four hours and the ear again gently inflated and the gauze packing removed. After this, a treatment, once in every two or three days, is usually necessary. Should the exudate persist in reforming, a solution of nitrate of silver .5 to 1 gr. to the ounce of boiled distilled water, acts favorably, both injected into the Eustachian tube and instilled in the tympanum through the incision.

32.—This article appeared in THE JOURNAL of September 7, p. 611.

33.—Ibid., p. 613.

45. **Alcohol.**—Crothers reports several cases where a single intoxication with alcohol seemed to produce permanent effects in persons previously unused to stimulants. He believes that intoxication to the extent of coma with profound relaxation of all the functional activities of the body is often a serious injury to the brain and nerve centers, and is followed by neuroses and organic change. The significance of alcohol intoxication in the study of obscure diseases can not be overestimated. It may be both an active and exciting cause, and should always be considered in neuro-psychopathies or other disorders that follow. The intoxication of puberty or middle life is often the starting of a circle of diseases usually ascribed to other causes. Intoxication always predisposes to the diseases of inebriety from alcohol or opium which may come on suddenly in after-life. Alcoholic poisoning is far more serious than supposed in its effects and the neuroses which follow.

46.—See abstract in THE JOURNAL, xxxvi, p. 1727.

47. **Tuberculosis of the Testicle.**—The following deductions are presented as a result of study of this subject by Abell: 1. The epididymis is the most frequent starting-point of the uro-

genital tuberculosis. 2. It is usually secondary to some other focus, but may be a primary deposition. 3. The testicle is rarely primarily affected, but, as a rule, secondarily so from the epididymis. 4. Primary infection usually occurs by the blood-stream, possibly rarely by coitus. 5. When the epididymis is primarily infected through the blood-supply, the process is probably an intertubular one. 6. When secondary to other foci of the urogenital tract, constituting a descending infection, the process is probably intratubular.

63. **Chorea.**—The etiology and pathology of chorea are discussed by Favill. Its nature has been a subject for wide range of speculation; functional, embolic, toxic, infectious and degenerative causes have all been advocated. The early apparent association of chorea with rheumatism has led to the general belief in the allied nature of the two conditions, some holding that rheumatism in general may be the cause, others in rheumatism with endocarditis as a complication. Favill favors the idea that chorea, arthritis, and endocarditis are related to each other and are related to an infectious cause or causes, though he would not say that these are the only causes. He believes that they are co-ordinate manifestations of disease conditions peculiar to the young in the following order, endocarditis, first; chorea, second; and arthritis last, and that infection is usually an important element of the cause.

65. **Bovine Tuberculosis.**—The question given in the title is discussed by Ingals, who credits Koch's view with a certain amount of validity and his proposition certainly seems reasonable, he says, from evidence, but with him he would withhold conclusions until further research can furnish definite proof. In the meantime many of the profession feel warranted in advising their patients not to worry as much as formerly about milk, though no one wishes the care relaxed that is now being taken to prevent the sale of milk from diseased cows, or to prevent consumption from tuberculous beef. He finishes with the suggestion that condemned criminals might be utilized for experimentation to test this question and has no doubt that many criminals who have forfeited their lives would gladly accept the chance to prolong them even within the walls of the penitentiary.

68.—See abstract in THE JOURNAL, XXXV, p. 1005.

69.—Ibid., p. 1172.

71.—Ibid., p. 1104.

73.—Ibid., p. 1172.

82. **Interocular Base Line.**—The interocular base line, so-called by Helmholtz, meaning by this the line joining the centers of motion of the two eyes, is sometimes of some value and Howe describes the method of its measurement. It may be of use in curing certain cases of asthenopia and in prescribing proper glasses and centering the lenses. Two methods are here described, for the details of which the reader is referred to the original paper.

85. **Tuberculosis of the Conjunctiva.**—After reporting a case, Hansell gives the data which he has obtained from a perusal of the literature of the subject. He finds that the cause is often self-infection, wiping the eyes with infected articles, metastasis or traumatism. The palpebral conjunctiva is most frequently infected. The tubercles appear in the form of miliary ulcers, of subconjunctival nodules resembling the granules of acute trachoma, hypertrophied papillæ, and pedunculated tumor resembling papilla fibroma. In addition, Sattler mentions lupus as one of the forms. For diagnosis, the evidence of tuberculosis of other organs and the microscopic examination are largely to be depended on, since tubercle bacilli are not often found. Their presence, however, is confirmatory of tuberculosis. Many cases are undoubtedly masked by trachoma and others diagnosed as trachoma are tuberculous. The methods of treatment that have received the strongest endorsement are excision and the galvanocautery. The inflamed section of the conjunctiva and the healthy zone surrounding it should be excised where the case is not inoperable. If the pre-auricular or other glands are involved, they should be included in the operation. If the case has gone beyond the operable stage, the ulcers should be burned by the galvanocautery.

87. **Entropion and Trichiasis.**—Foster's article is largely a review of the literature and the methods of treatment of this condition. He thinks the real progress in surgery of entropion and trichiasis is perhaps embodied in two modifications, of the Celsus operation, the anchorage of the lower flap of the skin to the upper border of the cartilage to secure permamency, and the implantation of a wedge-shaped graft of mucous membrane to prevent the agglutination of the lips of the wound behind the lashes. The popularity of various modern operations, such as Streatfeild-Snellen, and the Jaesche-Arlt, depend largely on the presence of two or more of the principal features of this operation so modified, the shortening of the lid skin, its anchorage to the cartilage, the partial detachment of the ciliary margin and the reformation of the edge of the lid.

93. **Pernicious Anemia in Infants.**—The first part of Rotch and Ladd's paper is largely a discussion of the literature and theories of this condition and a case is reported in detail. The important points emphasized are the insidious onset, with moderate and paroxysmal attacks of indigestion, extreme pallor and loss of strength, absence of any possible demonstrable cause for a secondary anemia, slightly elevated temperature with absence or glandular or splenic enlargement, the presence of pronounced typical characteristics of the blood of pernicious anemia, absence of any considerable degree of leucocytosis, and rapid improvement in the general symptoms and in the character of the blood with apparent complete recovery, which is typical of the remissions which so often occur. While the child may be perfectly healthy to-day as far as can be determined, the fact remains that permanent recovery has never been reported in any well-attested case of pernicious anemia in infants. Several cases of recovery in adults are on record and it is suggested that the great recuperative power in infants' blood may resist the usually fatal tendencies. As regards the treatment of these cases the management of the feeding is of first importance. Arsenic may be tried cautiously and iron in the form of ferratin or similar preparations will do no harm and may be of benefit. Cabot has recently been treating his cases with laxatives or purgatives on the theory that the disorder is due to absorption of toxins from the intestine, but no definite results have as yet been announced. In these cases the inhalation of oxygen was used in large quantities for long periods and immediate and rapid improvement followed its administration. It is difficult, however, to say anything as to the efficiency of special remedies.

94. **Cyclical Albuminuria.**—After noticing the literature and the theories of the disease, Churchill reports a case in detail with urine and blood examinations, etc. He considers that the symptom is a real danger signal not to be slighted and that its cause should be carefully investigated.

95. **Rectal Polypi.**—The etiology of rectal polypi is discussed by Huber who reports the case of an undersized boy, somewhat backward, with pronounced aprosexia due to adenoids. In addition, goiter and moderately enlarged lymph nodes furnished further evidences of the status lymphaticus. The abnormal rectal condition was doubtless a local manifestation of the same nature. He has noticed one feature common in all cases which have come under his observation during the past four or five years, namely, that rectal polypi were found only in patients who at the same time showed other evidences of lymphoid hypertrophies in the nasopharynx, with other manifestations of the status lymphaticus, and he concludes that this can not be a mere coincidence. The reason why they are not more common is, he thinks, possibly because they are unobserved to some extent.

96. **"Fourth Disease."**—Simpson's paper is based on the experience with an epidemic of a peculiar condition of eruptive fever occurring in the School for the Deaf in Hartford. At least five of the patients had a second rash occurring two or three weeks after the first, lasting several days with slight rise of temperature, but no feeling of malaise. Five of the

patients had had previous scarlet fever and 4 of them are said to have had German measles; there had also been a previous occurrence of an epidemic of "pinkeye," mild in character, which he thinks was rubella manifesting itself in this way. The fact of lamellar desquamation in a large proportion of cases which was certainly not scarlet fever, does more than anything else to make credible the existence of another eruptive disease. The form of desquamation is the chief diagnostic point between "fourth disease" of Dukes and rubella.

104. **Classification of Insanity.**—The conclusions of Dercum's article are: 1. All of the mental disorders which result from the infections, the intoxications, the diatheses, the visceral diseases, the diseases of the nervous system, pregnancy, the puerperium, the lactation,—in short, from all of the diseases and morbid physiological states—belong to the symptom group of delirium-confusion-stupor dementia. Delirium, confusion and stupor are largely interchangeable terms possessing a certain degree of equivalence, and it must depend largely upon the activity of the morbid process as well as upon its character as to which of these forms is present in a given case. That secondary differences of symptoms, dependent upon the nature of the infection or the special poison that has been ingested are present, goes without saying, but these differences in no way affect the truth of the general statement. 2. The melancholia-mania syndrome bears no relation to the various infections, intoxications or visceral diseases. Neither mania or melancholia ever results from them. Mania and melancholia are diseases primarily of the nervous system—neuroses so to speak—and are largely hereditary. He thinks that much confusion has resulted from the unscientific use of mania and melancholia and considers that neither of these or paranoia or the neurasthenia-neuropathic insanities bear any relation to internal diseases, but their onset is favored by any causes that are attended by persistent depression of nutrition or by degenerative changes in the nervous system. 3. The delirium-confusion-stupor syndrome may occur at all ages. Melancholia-mania and paranoia, on the other hand, are related to definite periods of life. 4. The delirium-confusion-stupor syndrome usually occurs independently; its forms may, however, occur as complications or episodes in any of the other affections.

113. **Gonorrhea.**—According to Professor Neisser, gonorrhea is curable in all cases that are properly treated. A definite percentage, however, can not be given and cases of posterior urethritis, and prostatic involvement are much more serious, but even here the prospects of rendering the individual non-infectious, though much diminished, are not yet unfavorable. The indications for treatment are to destroy the cause of the disease, the gonococci, by a treatment that must be capable of deep penetrating action, an effective germicide free from astringent qualities and that will not enter into chemical union with albumin, mucin or chlorin of the tissues. Simple astringents are unsuitable in the acute stage and all mechanical and semi-mechanical methods requiring sounds, endoscope, etc., are dangerous. He considers that protargol has a strong germicidal action, and is least irritative, while argonin, oxycyanate of mercury and largin can be used in the later stages. The Janet irrigations where practicable, and prolonged injections are suitable methods of application. The chronic cases should be treated with bactericidal solutions as long as the gonococci are found and sometimes afterwards. The patient should be permitted to marry when, after thorough, complete and often-repeated examinations, the physician is able to state that the gonococci are not found either by provocative mechanical, or chemical measures. This is from a practical rather than from an academical standpoint. Burnett answers also in the affirmative as to the curability of the disease and thinks fully 100 per cent. are curable. He finds local treatment best in the acute cases, giving internal remedies in case of irritating urine or where it is needed to sterilize, and in chronic urethritis. He thinks, however, it is unsafe to depend solely on the disappearance of the gonococcus, and he would make the limit of time before the patient is fit to marry from six weeks to as many months after complete restoration to the normal as far as possible.

122. **Convulsions in Children.**—A convulsion is a symptom, not a disease, often due to inherited nervous conditions. The child is naturally unstable and the symptom may be a reflex from over-stuffing, intestinal poisoning, and disturbed thermogenesis. Acute auto-infection acting on the former produces the eclamptic seizure. According to Dickey the convulsions not infrequently take the place of the rigor in adult life, ushering in the acute infectious diseases and in the hyperpyrexis of such disorders is diphtheria and pneumonia, where it may also occur. In any case he would first use the thermometer, no matter how urgent the symptoms, and if there is a temperature of 103 or more and the extremities are not cold, he believes a hot bath contra-indicated, but that a cold sponge bath should be employed. The stomach tube, an emetic, anema of warm soap suds, should be used, if indigestion is suspected. Under the cold bath, the temperature is lowered, inspiration becomes longer and deeper, more oxygen is taken into the blood and carbonic acid is liberated, the brain centers and nerves are better nourished and the heart is regulated, and the kidneys secrete more urine, carrying off the poisonous products.

124.—See abstract in THE JOURNAL of September 14, p. 721.

125. **Suprapubic Lithotomy.**—Lydston remarks that the simplicity of this operation may tempt its performance on the part of surgeons whose technique is faulty and experience small. The statistics of the operation in the hands of one individual constitutes no criterion of the possible mortality rate in the hands of another. There are special dangers of injuring the peritoneum and of extensive laceration of the bladder, as well as of infection, in any case. He thinks, however, there should be no hesitation in choosing this method when stones of considerable size exist, and that with increasing care in the technique, there will be a decrease not only in the mortality rate, but convalescence will be quicker, there will be fewer cases of infection and the danger of hernia will be reduced to a minimum. An improvement in the results, however, can not occur until operators in general have learned that, in spite of the simplicity of the operation from a mechanical standpoint, there are many details of technique to be improved before the ideal operation can be performed. He says there is a question in his mind whether with improved technique it might not come to be the most useful operation of all for stones, not excepting litholopaxy.

128. **Hedonal.**—After discussing the physiology and therapeutic effects and reporting a case in which this drug has been used, Walling comes to the conclusion that the chief disadvantage of hedonal is its disagreeable taste and that its advantages are: "1. Its acceptability to the stomach, as a rule, notwithstanding the above objection. 2. Its positive effect in a majority of cases. 3. It has no injurious after-effects. 4. Its use may be continued indefinitely, with good results, or it may be discontinued at any time without the fear of the formation of a habit."

135. **Nose and Throat in Medicine.**—Wright continues his historical article reviewing the periods of Hippocrates down to Roman medicine and Celsus.

136. **Subarachnoid Cocainization.**—The use of subarachnoid cocainization for operations on the head is discussed by Payne, who goes into the details of the method and reports cases. To produce anesthesia of the upper extremities he says it is simply required when the needle is injected that it be pointed upward and the cocainized solution be forced in quickly. He has had no bad consequences in his cases except headache, which is sometimes severe but is readily relieved. In no case has there been surgical shock and he endorses the method as having no contra-indications. He has used this method for two simple mastoid operations, one Stacke operation, one frontal sinus operation, one ossiculectomy and one enucleation of the eye.

143.—See abstract in THE JOURNAL of July 13, title 136, p. 142.

FOREIGN.

British Medical Journal, September 14.

Observations on Blackwater Fever. F. K. KLEINE.—Koch's views as to the quinin origin of blackwater fever are supported here by Kleine, who, at the request of Dr. Koch, reports fifteen cases that appear to support his views. In each of the histories the hemoglobinuria followed more or less immediately the administration of quinin, and the reported instances where it has occurred without quinin are accounted for by him as largely based on the imperfect details of facts. The quinin works on the blood corpuscles already diseased by the malarial infection; a weakened organism is more powerfully acted upon by poisons than a healthy one and other substances than quinin have been reported as causing hemoglobinuria, such as antifebrin and salipyrin. Blackwater fever does not occur in temperate climates, because there we do not have the extensive and unregulated use of the drug as in the tropics, so that we have no idea how the prolonged administration influences the blood composition. Koch's views are not altered from those formerly held; he believes in the majority of cases blackwater fever is the result of quinin poisoning in malarial patients, but at the same time he holds that by means of an appropriate quinin prophylaxis malaria, and with it, in the vast majority of cases, blackwater fever can be stamped out. An imperfect quinin prophylaxis which does not entirely protect against malaria, on the other hand, predisposes to blackwater fever, for in such a case plasmodia and quinin unite to act harmfully on the organism.

Influence of Color Upon Anopheles. GEORGE H. F. NUTTALL.—This author has investigated the preferences of the anopheles to different colors. It was noticed at the beginning that they settled on dark cloth, but rarely do this upon white flannel. Therefore, a number of pasteboard boxes were taken, lined with cloth of different colors and placed in rows, the order being changed each day after the observations had been made. For seventeen days during the month they counted the number of flies that had accumulated in the boxes and found that the boxes lined with navy blue, dark red, reddish brown, scarlet and black contained far the largest number, navy blue being evidently the preference and the others following in the order mentioned. The smallest numbers were found in the green, violet, light blue, pearl gray, ochre, and orange boxes, but none whatever in pure yellow. Pale green, light blue, ochre, orange and yellow, especially the last two, seemed to repel the insects. The practical deductions from these facts are that the khaki uniform now in vogue has advantages besides being invisible to the human enemy; its color is absolutely repellent to this malaria-bearing mosquito.

A Further Note on the Biological Test for Blood and Its Importance in Zoological Classification. GEORGE H. F. NUTTALL.—The same author has experimented on 140 samples of blood derived from all classes of vertebrata to test their antiserum reaction. None, except monkey bloods, gave reactions for human bloods and the blood of the old-world monkeys gave much more powerful reaction than that of the American monkeys, indicating the truth of the Darwinian theory of the closer relationship between man and the old-world apes than with the American monkeys. The antiserum for dog's blood only gave reaction for the blood of the jackal (Canis mesomelas). The antiserum for ox and sheep blood only gave full reaction for homologous bloods, besides the slight reactions previously mentioned in an earlier paper. The ox antiserum produces slight reaction in the blood of the goat and a faint cloudiness in that of the roebuck and Burrhel sheep from the Himalayas. The sheep antiserum furthermore gave a marked reaction with the blood of the Burrhel sheep and of another wild species of sheep, a slight but distinct reaction with the blood of the goat, and a faint clouding with that of the roebuck. He thinks it certain that interesting results from the point of view of the zoological classification will be revealed by these tests thoroughly carried out. From a medicolegal standpoint the tests should be applied to as large a number of bloods as possible. He describes the method, which is simple; just saturate filter paper and dry it, and it makes no difference whether the blood is from a recently dead or living animal.

Inoculation and the Incubation Stage of Plague. W. B. BANNERMAN.—Calmette is reported to have given his opinion that in a person in the incubation stage of a slight attack of plague we should find the disease rendered grave if at this period a preventive inoculation of the Haffkine vaccine was given, and the case would almost certainly end fatally. Bannerman has investigated this subject statistically, taking the facts that he could collect from different Indian stations and finds that this statement is not borne out. In fact, it is manifest, he says, that there is very little difference between the percentage case-mortality in those attacked respectively before and after the first ten days' period subsequent to inoculation. The figures seem in fact to point to a sudden and very considerable measure of protection being secured after the lapse of twenty-four hours only, though this desirable effect increases with lapse of time.

A Discussion on Stone in the Tropics. P. J. FREYER.—In opening the discussion on stone in the tropics, Freyer accounts for the frequency of stone in India by the geological conditions and drinking water. The regions where stone is most frequent are those were lime salts are in solution in the drinking water and find their way into the system, being deposited in the urinary tract in the form of oxalate of lime; or by causing derangements of the digestive system, lead to the formation of uric acid and urates in excess and eventually to deposits of crystals in the urinary passages, resulting in the formation of stone. The climatic condition also favors this. These special regions are characterized by scantiness of rainfall as compared with the rest of India; great alterations in the temperature, scanty rainfall and intense heat promote excessive perspiration, most of the fluids of the body passing off in perspiration and thus leading to concentration of urine which is likely to facilitate the deposition of crystals. Food and feeding, he thinks, have less influence. He believes the Indian experience shows the great advantage of Bigelow's litholopaxy operation over all other methods.

The Lancet, September 14.

Changes Effected by Antityphoid Inoculation in the Bactericidal Power of the Blood. A. E. WRIGHT.—A summary of the facts brought out in Wright's article is given by him in the following practical conclusions: With regard to the sequence of events after an anti-typhoid inoculation it has been shown: 1. That where the quantum of anti-typhoid vaccine employed produces the familiar well-marked constitutional symptoms a decrease in the bactericidal power of the blood and a corresponding increased susceptibility to typhoid infection may supervene in the period immediately subsequent to inoculation. Upon this negative phase of increased susceptibility there may, however, be expected to succeed, probably within a period of three weeks or less, a phase of increased bactericidal power and a greater resistance to typhoid. 2. That when the quantum of anti-typhoid vaccine employed produces very severe constitutional symptoms a negative phase of increased susceptibility will be produced which—and the same would appear to hold true also in case of a negative phase supervening upon an actual attack of typhoid—may never be followed up by a positive phase of increased resistance. 3. That when the quantum of anti-typhoid vaccine employed is reduced to the point at which marked constitutional disturbance is avoided a positive phase of increased resistance may be expected to supervene without the intervention of any negative phase, and in many cases within twenty-four hours. The practical conclusions are, therefore: 1. The employment of primary inoculation of large doses of vaccine—enough to give rise to severe constitutional symptoms, seems inadvisable and would probably be associated with danger in the actual presence of a typhoid epidemic. 2. The employment of a moderate dose of vaccine giving rise to marked, if not unduly severe symptoms would also appear to be inadvisable in the actual presence of a typhoid epidemic, but might be appropriately employed where

an interval of several weeks is to elapse before exposure to infection and where there are difficulties in the way of carrying out two successive inoculations. 3. The employment of small doses of vaccine producing only a slight constitutional disorder appears to be the only form of typhoid inoculation in the actual presence of an epidemic, and seems also in all other cases the most appropriate method. Such primary inoculation, however, ought always to be followed by a second inoculation, with an increased dose of vaccine. Of subordinate importance are the following: 4. Where the blood of a patient who has recovered from typhoid fever is found to possess a bactericidal power inferior to the average, and where re-exposure to typhoid is contemplated, it would seem advisable to secure for the patient the additional protection associated with possession of a high bactericidal power. This additional security can, if it is permissible to generalize from the observation detailed in one of the cases reported, be conferred by the inoculation of an appropriate quantum of anti-typhoid vaccine. 5. On the other hand, where the blood of the patient who has recovered from typhoid is found to possess a bactericidal power considerably above the average, it wound, taken together with certain other data, appear to be impracticable to increase the bactericidal power by the inoculation of sterilized cultures. 6. Wherever a doubt as to the efficiency of a particular anti-typhoid vaccine arises—and such doubts may obviously arise, either in connection with modifications introduced in the methods of preparing the vaccine or in connection with prolonged storage under unfavorable circumstances—it will always be possible to arrive at a decision of the efficiency of the vaccine by observing the effect exerted by the vaccine in question on the bactericidal power of the blood. He concludes that there appears to be a very definite limit beyond which the bactericidal power of the blood can not, it would seem, be increased by inoculation with sterilized cultures of the typhoid bacillus.

The Postoffice and the Prevention of Tuberculosis. CHARLES H. GARLAND.—From an investigation of statistics of an insurance society composed entirely of postoffice officials, numbering nearly 20,000, Garland finds that the amount of deaths from tuberculosis between the ages of 15 and 65 years number 45 per cent. Considering that these are selected lives, he thinks they point to a general contamination of postoffice buildings, and he suggests the use of prophylactic measures; the absolute prohibition of spitting, thorough disinfection, if possible, the disuse of dry sweeping, thorough weekly washings of the floors and a rigid exclusion of tuberculous subjects and tuberculous suspects by more rigid examination. The employes should be taught the causes and modes of prevention of tuberculosis; printed notices should be put up. These recommendations are largely quoted from a French report on the subject, which deals with the same conditions in French postoffices.

Presse Medicale (Paris), September 7.

Indications for Phototherapy. LEREDDE.—The efficacy of light therapy is due to the remarkable penetrating power of the chemical rays, which act on the lower strata of the integument, without destruction of tissue. There is none of the irregular action which renders the Roentgen rays so treacherous at times. The reaction is not painful, the cicatrices are perfect, and the blisters which form in the course of the treatment of lupus contain an alkaline fluid loaded with eosinophile cells. Leredde is convinced that the Lortet apparatus is a great improvement over Finsen's. It was described and illustrated in THE JOURNAL of July 20, p. 229. By the discovery of phototherapy, lupus has become an affection which should be regularly and normally cured. It fails in the advanced, intractable cases, but henceforth, no case of lupus should be allowed to reach this intractable stage. The physician should treat it early, and inspire the patient with the energy to complete the cure. Galvano-cauterization and scarification may be tried first, for a limited time, and then suspended to watch the results. If the lupus continues a progressive course, phototherapy should be applied, without waiting for the former measures as their prolonged use causes cicatricial formations which impede the action of the chemical rays. When the lesions are on the limbs or trunk they are usually very extensive and other measures are preferable. In case of erythematous lupus, if it is the aberrant form, salicylic and pyrogallic acid, mercurial plasters, high frequency electricity and scarifications are able to accomplish the cure. Phototherapy is not indicated except in those cases in which the lupus patch recurs year after year at the same point, in spite of these measures. Fixed erythematous lupus offers the same therapeutic problem as ordinary lupus, and consequently phototherapy is equally effective as in the latter. Electricity may also have a curative influence, but superficial applications are useless. Even after apparent cure, the lesions may recur again and again, and it is necessary to continue the phototherapy until complete sclerosis is obtained. All lesions of the face rebellious to other measures, may be cured by phototherapy. Finsen has cured one patient with extensive vascular nevi and improved nine others. Leredde has been much encouraged by his success in a few cases of this kind. One patient with a nevus occupying one entire side of the face, with a few patches on the other, was treated by phototherapy and the small patches were cured, but the other side was not affected. Another patient has been entirely cured of a number of patches on his chin. Phototherapy, therefore, will cure the less extensive nevi, without much thickening of the tissues, but is powerless—as at present applied—against the most pronounced cases. He has cured three cases of acne rosacea which had resisted all other treatments, applying the phototherapy very gradually and tentatively. He has also found it effective in extensive, almost chronic sycosis. He is now studying its action on buccal leucoplasia and alopecia areata. It is only exceptionally indicated for an epithelioma of the face, but may prove very valuable in rare cases. A patient with an old lupus of the temple and upper lid and eight or ten fresh epitheliomatous foci, was completely cured with two months of phototherapy.

September 11.

Regulating Apparatus for the Composition of the Blood. C. ACHARD.—When the natural emunctories are insufficient from any cause, the blood evacuates its waste products into the depths of the tissues, into the interstitial lymphatic circulation, the intercellular plasma and, possibly, into the protoplasma of the anatomic elements. These substances poured out into the tissues do not remain there permanently, but gradually find their way back into the blood, and are eliminated by the natural emunctories little by little. The molecular concentration changes less than the chemical composition and returns to normal more rapidly. The cycle of circulation in the blood of ingested chlorids, for instance, may have completed its evolution before the cycle in the extravascular circulation has commenced, and this fact aids in the regulation of the blood. The motive power controlling this regulating mechanism must be derived from the nervous system, and consequently therapeutics should aim to influence the latter rather than the blood itself. The assumption of this regulating mechanism explains the contradictory findings in cryoscopy. The blood is only transiently affected by insufficiency of the emunctories, the waste products are poured out into the depths of the tissues, and excite a reflux of fluids. There is a periodical interchange and when the emunctories function normally again, the solid substances are eliminated en masse. This is seen, for instance, in the excessive amount of chlorids voided after the crisis of an infectious disease.

Progres Medical (Paris), September 7.

Ovarian Treatment. E. VIDAL.—The ovary of sheep seems to be the best adapted for organ therapy, as it obviates the danger of tuberculosis which is so frequent in cattle. The ideal would be to take the ovaries from rutting animals, but this is seldom practicable at present. Vidal prefers the subcutaneous route to administration by the mouth, and has found ovarian therapy very effective in the natural or artificial menopause and in neurasthenia in women. The injection of the glycerin extract is made in the buttocks on a line passing from the last sacral vertebra to the upper margin of the great trochanter. He applies an air-bulb to facilitate the in-

jection of the fluid from the fused tube which holds only the exact amount to be injected, from .5 to 5 c.c.

Centralblatt f. Chirurgie (Leipsic), September 7.

Automatic, Weighted Retractors. G. DE FRANCISCO.—THE JOURNAL mentioned at the time the fine results reported by Tansini from the use of gold wire in suturing after herniotomy. He reduces the number of assistants and prevents all digital contact with the tissues by three new instruments illustrated in this communication. One is a broad, curved retractor which is hung like a hook over the spermatic cord, and by its weight of 146 gm. holds it automatically and permanently out of the way. Another rake-shaped retractor, weighing 250 gm., is applied to the edges of the aponeurosis of the external oblique on each side, and holds them firmly in its curved teeth. A long and narrow spade with a long handle bent in the shape of an L, is used by the assistant to press down the parts below the field of operation. Tansini now reports a series of 120 herniotomies in which the gold wire and these instruments were used, and none showed a trace of suppuration or recurrence. The quantity of wire needed is very small and the expense trifling. As it is left in the tissues it obviates all danger of a relapse.

September 14.

Slitting Thrombosed Varicose Veins. W. KRAMER.—Instead of extirpating the thrombosed varicose vein in the leg, Kramer merely slits it throughout its entire length and extracts the clots. In fifty patients thus treated, the lips of the wound in the vein closed spontaneously and healed without reaction. The patients were relieved completely of all their former troubles from this source. The lumen of the veins had become obliterated in the thrombotic process and consequently there was no bleeding nor symptom of embolism.

Deutsche Med. Wochenschrift (Leipsic), September 5.

Auto-Intoxication in Epilepsy. HEBOLD.—After four years of experimental research on dogs and white mice, Hebold announces that he was never able to establish any regular parallel between the toxicity of the organic juices of epileptics and their seizures. The blood and urine of epileptics during and between the seizures were injected subcutaneously into hundreds of animals, but the results fail to confirm the assumption of a morbid metabolism as the cause of epilepsy. The only positive result attained was that in a few cases the tests showed a condition of auto-intoxication, which was apparently the determining factor for a seizure in these patients.

Disinfection of Surgical Instruments with Tincture of Soap. J. H. POLAK.—Delicate sharp instruments are injured by being boiled. They can be disinfected without injury by tincture of soap, which Mikulicz recommends for disinfection of the hands. It is bactericidal and rapidly dissolves pus and blood. Straub has been using it for more than six months in his clinic and has found it very convenient and effective, with no disadvantages. After an operation he puts the sharp instruments in the tincture of soap for fifteen minutes and then cleanses them. Before the next operation he soaks them in tincture of soap for fifteen minutes and then rubs them carefully with a sterile linen rag, dipped in the tincture. This combination of the chemical and mechanical action of the tincture has proved extremely satisfactory. The instruments can be wrapped in cotton impregnated with the tincture.

September 12.

Suture of Heart Through Right Side. I. WATTEN.—The stab-wound in the heart extended into the right pleura and was accompanied by a large pneumo-hemothorax. The third and fourth ribs on the right side were resected close to the sternum and turned back, the flap extending from the lower margin of the second rib into the fourth interspace. The lung was covered with a gauze compress and pulled up out of the way with a long-handled retractor. The wound in the pericardium was enlarged and two stout silk threads passed through its edges. By pulling on these threads the heart was drawn well into view, showing the wound in it, about 2 cm. long, through which dark blood was trickling. The top of the wound was close to the base. The heart was hurled to and fro in the pericardium during its contraction and all efforts to insert the needle failed, until Watten seized the heart with two fingers from behind and pressed it gently against the sternum. This held it a little more quiet and a stitch was passed through the lips of the wound. The pause seemed to be lengthened as the needle was inserted, and the contractions followed at longer intervals when the heart was drawn up against the pericardium by pulling on the thread. As soon as it was released, it began to pulsate more rapidly again. Two other stitches were taken and the threads tied. The bleeding ceased and the pulsations were considerably longer. The entire posterior and anterior surface of the heart, except the apex, could be palpated with the introduced forefinger. Two strips of gauze were left in the wound in the pericardium, one above and one below; the pleural cavity was loosely packed with gauze, the skin and bone flap replaced and sutured except where the gauze emerged. This portion was also lightly sutured to prevent the coughing out of the gauze. When the drain in the pericardium was renewed, about 100 c.c. of a sero-sanguine effusion was evacuated two days in succession, after which recovery proceeded rapidly, and the patient is now completely restored, able to do the severest physical work. Watten was amazed at the ease with which the heart could be drawn up into the wound and sutured from the right side. He thinks that resection of the sternum is absolutely unnecessary in case of wounds of the heart.

Fungus Colonies in the Stomach. M. EINHORN.—In six cases of hyperchlorhydria or gastralgia with normal or diminished secretion of gastric juice, Einhorn discovered large quantities of a fungus in the stomach. It was evidently colonizing there as the mycelium, spores, etc., were found numerous when the stomach was empty as well as after eating. Lavage of the stomach, followed by spraying with a 1 or 2 per 1000 solution of nitrate of silver, evidently improved the patient's condition, and it seems plausible that the morbid process, if not caused by the fungus, was at least aggravated by it.

Muenchener Med. Wochenschrift, September 3.

Surgical Treatment of Strictures of the Lachrymal Ducts. PASSOW.—By slitting the duct from inside the nose it is possible to cure existing stenosis and stricture without a scar and with very little danger of recurrence. Passow has had occasion to perform this operation only four times, but the success was striking in each. Tests on the cadaver have shown that the operation is practicable even with a very narrow nasal passage. One assistant must hold the speculum absolutely still, while another wipes the blood. In some cases, removal of the lower portion of the inferior turbinate bone will render the duct permeable and avoid the necessity for further intervention. For this reason it may be well to wait for the results of this intervention before proceeding to slit the duct. Passow prefers the chisel and believes that there is less danger of recurrence of the stricture when the incision is carried into the sac. In two of his cases the operation cured the oozing; the others are too recent for a definite conclusion.

Acid Intoxication in Diabetes Mellitus. O. BUSSE.—Three cases of fatal diabetes mellitus are described, in which the kidneys, heart and liver presented the same "boiled" appearance noticed after intoxication with dilute mineral acids. Acids are generated in diabetes, especially betaoxybutyric acid, to such an extent that the alkalinity of the organs and of the blood is completely neutralized, and the acids circulate freely and uncombined in the organism. It is therefore probable that coma and death in diabetes may be due to the injurious effects on the organs of this excess of acid entailing a fatal acid intoxication.

Paraffin Injections in Facial Atrophy. A. LUXENBERGER.—The deformity resulting from progressive facial hemiatrophy in two young women was completely cured by the injection of paraffin according to Gersuny's directions. One case was very extensive, requiring fourteen injections of small amounts of the paraffin in the brow, temple, nose and cheeks, with massage afterward to model the parts symmetrical with the other side.

In the second case the atrophy was restricted to the lower jaw and four injections were sufficient to restore the cheek to its normal outlines. There was a slight smarting after each injection, with the sensation of a foreign body in the cheek, but this all passed away in the course of half a day. The mixture of hard and soft paraffin, called in Germany "white American vaselin," which is used for these injections, does not produce irritation even when comparatively large amounts are used. Straume found that animals tolerated three to ten grams per kilo of the body weight. In Luxenberger's two cases the appetite, pulse, temperature, respiration and urine showed no trace of disturbance during the course of the injections.

Malignant Tumors of the Tonsils. Heinleth.—Heinleth describes a case of a round-celled sarcoma, 4 cm. long by 2 wide and 2 thick, removed from the throat of a robust man. It was followed by a recurrence in a month, which was likewise extirpated. Twenty-three months have since passed and there are no suggestions of further recurrence. The patient weighs 172 pounds and a linear scar is the only trace of the operation. He removed the tumor by the Kroenlein-Langenbeck method, the incision starting at the corner of the mouth and curving downward over the horizontal ramus of the lower maxilla to the cornu of the hyoid bone and thence upwards to the rear margin of the mastoid process. The maxilla was divided at the second molar. The glands were enucleated, the arteries exposed and the lingual artery ligated. The maxilla was then twisted still farther out of the way and the mouth entered, after placing the patient with his head pendent over the edge of the table. The anterior and posterior pillars to the base of the tongue, the right half of the posterior pharyngeal wall and a portion of the soft palate and of the uvula were removed with the tumor. The defect was partially closed by drawing the mucous membrane of the cheek and of the pharynx nearly together. The open portion was tamponed, the maxilla sutured with silver wire and the skin with catgut. The patient was encouraged to get up the second or third day and the wound rapidly healed. He was able to swallow liquid food almost from the first. The avoidance of tracheotomy and the simplicity of the after-treatment are the chief advantages of this method of intervention. The recurrence was removed by the cautery through the mouth.

September 10.

Floor Infection of Young Children with Tuberculosis. Dieudonné.—Fifteen children between six months and two and one-half years old, who played on the floor in poverty-stricken homes where one or both of the parents was tuberculous, were examined to see if tubercle bacilli could be discovered on their hands or nasal membrane. Nearly 90 guinea-pigs were inoculated and virulent tubercle bacilli were found on the hands of two of the children and in one in the nose.

Wiener Klin. Wochenschrift, September 5.

Treatment of Hourglass Stomach. K. Buedinger.—A patient exhibited the symptoms of hourglass stomach on a cicatricial basis, and was operated on, but no traces of the supposed hourglass shape were discovered. The pylorus was permeable for the finger and soft. A fibrous adhesion connected the pyloric region with the omentum, and a small T-shaped scar was noted on the anterior surface of the stomach, about 6 cm. from the pylorus. As this was being palpated, the stomach suddenly contracted and assumed under the operator's eyes the typical hourglass shape, the pyloric region forming a tumor, closing its lumen completely. The tumor subsided after five seconds and the phenomenon was repeated twice in five minutes. It demonstrated that spastic pylorus tumors are in fact due to the contracture of the antrum or of the antrum plus the pylorus, and that the apparent hypertrophy is merely the rigidity of the contracture. In this and similar cases, when the hand was placed over the lesser curvature and the greater was pressed with the other hand, it was possible to perceive a trickling of fluids from one into the other as through a very narrow aperture. In cases not adapted for gastroenterostomy, favorable results may be attained by incising the stomach at the edge of the greater curvature, carrying the incision equally high on both the front and rear surfaces of the organ. The edges of the incision are then sutured together which restores the stomach to nearly normal shape. This operation was performed on one practically moribund patient with excessive hematemesis, but she succumbed soon afterward. The operation, however, established the feasibility of this technique.

September 12.

The "Ether Drunk" in Its Practical Application. F. Teweles.—Relaxation and analgesia follow ten or fifteen deep inhalations through the ether mask on which from 10 to 30 c.c. of a mixture of balsamic oil and ether have been poured. The operation can thus be commenced within a minute of the first administration of the ether. In about a third of the 157 cases operated on by this technique at the Vienna Rudolfinerhaus, the patient made some slight repelling movement and then quieted at once. In but very rare cases was it necessary to administer another 10 c.c. One patient who was making vigorous defensive movements with her arms, held the leg on which the operation was being performed, perfectly still. The flask first used holds 30 c.c., the others 10 c.c. each, and it is seldom necessary to use more than one or two of the latter, even in very protracted operations. It is possible to keep patients thus "drunk" for an hour with as little as 110 c.c. of the ether. The operator aims to keep the patient on the narrow borderland between awaking and the manifestation of the stage of excitement. The appearance of the patient is that of a man "dead drunk." This "ether rausch" has nothing in common with ether narcosis except the substance employed. The preparation of the patient consists merely in fastening his attention exclusively on the narcosis. This method of anesthesia is practicable in two-thirds of all operations. If it fails, for any reason, it can be supplemented by ether or chloroform, transforming it into an actual narcosis, and even in this case, it has advantages over the latter alone. As such minute amounts of ether are used, it is absolutely harmless. The disadvantages are that many patients scream and make a disturbance, although they do not experience the slightest pain. Sometimes they make a defensive movement at the first touch of the instrument. Certain nervous patients are too excited to concentrate their attention on the narcosis and this method is liable to fail in their case and also in case of hard drinkers. But these disadvantages are too slight to prevent the general adoption of the "ether rausch," which will certainly follow the recognition of its harmlessness and effectiveness, and a better knowledge of the cases to be excluded.

Gazzetta degli Ospedali (Milan), September 8.

Interrupted Centrifugalization for Sedimentation of Urine. E. U. Fittipaldi.—A simple method of freeing urine from muco-pus cells, which sometimes completely obscure the microscopic field, is to rotate the centrifugal apparatus fifty times and then pour off the supernatant fluid. Physiologic salt solution is added in its place and the centrifugalizer rotated again for about twenty times, and then again for ten, substituting the salt solution each time. By this interrupted centrifugalization all the muco-pus cells are poured off in the supernatant fluid, leaving all the elements needed for the diagnosis of nephritis, etc.

Serodiagnosis in Tuberculosis. F. de Grazia.—The serum of many animals entirely free from tuberculosis proved capable of agglutinating homogeneous cultures of the tubercle bacillus in the research described by De Grazia. He found also that agglutination was produced not only by the serum of tuberculous patients but also by that from normal persons and from patients with various diseases. Serum from tuberculous subjects has also marked agglutinating power on cultures of other bacteria, the staphylococcus, typhoid, diphtheria and other bacilli. The agglutinating reaction is intense in progressing, advanced tuberculosis, and is perceptible even in the incipient stages, although there is no strict parallel between the degree of agglutination and the stage of the disease. It occurs with killed cultures, but very much more slowly. The agglutinating reaction, therefore, has little, if any, specific diagnostic significance.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

HOLDEN'S ANATOMY. A Manual of the Dissection of the Human Body. Edited by John Langton, Surgeon to, and Lecturer on Anatomy at, St. Bartholomew's Hospital. Seventh Edition. Revised by A. Hewson, M.D., Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. In Two Volumes. Vol. I. Scalp, Face, Orbit, Neck, Thorax, Upper Extremity. 153 Illustrations. Vol. II. Abdomen, Lower Extremity, Brain, Eye, Organ of Hearing, Mammary Gland, Scrotum and Testis. Illustrations. Cloth. Pp. 843. Price, $1.50 per volume. Philadelphia: P. Blakiston's Son & Co. 1901.

SURGICAL TECHNIC. A Text-book on Operative Surgery. By Fr. von Esmarch, M.D., Professor of Surgery at the University of Kiel, and E. Kowalzig, M.D., Late First Assistant at the Surgical Clinic of the University of Kiel. Translated by Professor Ludwig H Grau, Ph.D., Formerly of Leland Stanford University, and William N. Sullivan, M.D., Formerly Surgeon of U. S. S. *Corwin*. Edited by Nicholas Senn, M.D., Professor of Surgery at Rush Medical College. With 1497 Illustrations and 15 Colored Plates. Cloth. Pp. 866. Price, $7.00. New York: The MacMillan Co. 1901.

MANUAL OF THE DISEASES OF THE EYE, for Students and General Practitioners. With 275 Original Illustrations, Including 36 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, Eye Department, College of Physicians and Surgeons, N. Y. Second Edition, Revised. Cloth. Pp. 408. Price, $2.00. New York: Wm. Wood & Co. 1901.

DISEASES OF THE STOMACH AND THEIR SURGICAL TREATMENT. By A. W. Mayo Robson, F.R.C.S., Member of Council and Hunterian Professor Royal College of Surgeons of England, and B. G. A. Moynihan, M.S. Lond., F.R.C.S., Assistant Surgeon Leeds General Infirmary. Cloth. Pp. 388. Price, $3.50. New York: William Wood & Co. 1901.

A MANUAL OF DETERMINATIVE BACTERIOLOGY. By Frederick D. Chester, Bacteriologist of the Delaware College Agricultural Experiment Station. Cloth. Pp. 401. Price, $2.60. New York: The MacMillan Co. 1901.

WHAT A YOUNG WIFE OUGHT TO KNOW. Thousand-Dollar Prize Book. By Mrs. Emma F. Angell Drake, M.D., Graduate of Boston University Medical College. Cloth. Pp. 288. Price, $1.00. Philadelphia: The Vir Publishing Co.

CLAUDE HARTLAND. THE STORY OF A LIFE: For the Consideration of the Medical Fraternity. Cloth. Pp. 141. Price, $1.00. St. Louis, Mo.: Lewis S. Matthews & Co.

PHYSICIANS' CLINICAL CHART AND FEE BOOK. By Walter Key, M.D., Pilger, Neb., Member of American Medical Association. Volume I. Leather. Price, $1.00.

Queries and Minor Notes.

MEDICAL LAWS.

CLUTIER, IOWA, Sept. 18, 1901.

To the Editor:—Will you please inform me of the requirements to practice medicine in Colorado? Is a diploma sufficient or is an examination also required? M. B.

ANS.—A diploma or other satisfactory evidence of graduation from a regularly chartered medical school recognized by the Board, or an examination, is required.

RIB LAKE, WIS., Sept. 20, 1901.

To the Editor:—Would you please quote me the medical law of Montana? O. E. W.

ANS.—Montana requires a satisfactory diploma and passing of examination. Write to Secretary of Board of Examiners, Dr. Wm. C. Riddell, Helena.

BRENHAM, TEXAS, Sept. 23, 1901.

To the Editor:—Will you please give in the next issue of THE JOURNAL the law governing the practice of medicine in the State of Louisiana, and the name of the president and secretary of Examining Board? J. B. Y.

ANS.—Louisiana requires a diploma from a medical college in good standing as determined by the State Board, and a satisfactory examination. The secretary of the Board is Dr. F. A. Larue, 624 Gravier St., New Orleans.

SCHLEICH'S LOCAL ANESTHESIA.

MACON, GA., Sept. 16, 1901.

To the Editor:—Will you please state in the next issue of THE JOURNAL the nature of Schleich's local anesthesia?

ANS.—Schleich's method consists in the local injection, into the corium and around the field of operation, of a weak solution of cocain, morphin and chlorid of sodium, producing an edema of the skin. Several solutions of different strength of cocain and morphin are used. The following is Schleich's second solution and most commonly employed, according to the International Text-Book of Surgery: Cocain muriat., .10; morph. muriat., .025; sodii chlorid., .20; aq. destil., ad 100. Sterilize and add gtt. ii of 5 per cent. carbolic acid. The stronger solution No. 1 has twice as much cocain, and No. 3 has only .01 cocain and .005 morphin, the sodium chlorid remaining the same in all three. If other structures than the skin are to be anesthetized the injections are made correspondingly deeper. Eucain has been extensively substituted for cocain, it is claimed, to much advantage.

The Public Service.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Sept. 19, 1901:

P. A. Surgeon J. O. Cobb, granted five days' extension of leave of absence from Sept. 13, 1901.

P. A. Surgeon Rupert Blue, granted five days' extension of leave of absence.

P. A. Surgeon J. A. Nydegger, relieved from duty at Cape Charles Quarantine and directed to proceed to Cairo, Ill., and assume temporary command of Service during absence of P. A. Surgeon J. H. Oakley, on leave. Granted two days' leave of absence from Sept. 10, 1901.

Asst.-Surgeon J. F. Anderson, directed to report to Medical Officer in Command, Immigration Service, New York City, for duty.

Asst.-Surgeon C. W. Wille, directed to assume command of service at Cape Charles Quarantine, relieving P. A. Surgeon J. A. Nydegger.

A. A. Surgeon G. N. Barnesby, granted leave of absence for one month from Sept. 1, 1901.

A. A. Surgeon R. E. Ebersole, granted three days' extension of leave of absence from Sept. 9, 1901.

A. A. Surgeon J. W. Stevenson, granted leave of absence for sixteen days from Sept. 9, 1901.

A. A. Surgeon W. S. Walkley, granted three days' leave of absence from Sept. 12, 1901.

A. A. Surgeon Juan R. Xiques, granted leave of absence for thirty days from Sept. 1, 1901.

Sanitary Inspector J. Y. Porter, directed to visit Key West, Miami, Jacksonville, Fernandina and Mayport, as appraiser.

Hospital Steward L. W. Ryder, directed to report to Director of Hygienic Laboratory for temporary duty.

Surgeon Eugene Wasdin, relieved temporarily from command of the service at Buffalo, N. Y., and assigned to special duty with the President—Sept. 13, 1901. Detailed to represent the service at meeting of American Public Health Association, September 16-20.

Surgeon W. J. Pettus, granted leave of absence for two months from September 15.

Surgeon R. M. Woodward, detailed to represent the service at the meeting of the American Public Health Association, September 16-20.

P. A. Surgeon M. J. Rosenau, detailed to represent service at meeting of the American Public Health Association, September 16-20. Granted leave of absence for one day, September 14.

Asst.-Surgeon Dunlop Moore, relieved from duty at Nome, Alaska, and directed to proceed to the States and await orders.

A. A. Surgeon G. H. Altree, granted leave of absence for fourteen days from September 9.

A. A. Surgeon J. G. Stanton, granted leave of absence for eighteen days from September 13.

A. A. Surgeon W. O. Wetmore, directed to assume temporary command of service at Buffalo, N. Y., during absence of Surgeon Eugene Wasdin on special detail.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Sept. 21, 1901:

SMALLPOX—UNITED STATES.

Illinois: Freeport, Sept. 7-14, 1 case; Peoria, Aug. 1-31, 24 cases.
Maine: Portland, Sept. 7-14, 1 case.
Massachusetts: Boston, Sept. 7-14, 2 cases.
Nebraska: Omaha, Sept. 7-14, 1 case.
New Jersey: Newark, Sept. 7-14, 4 cases, 1 death.
New York: New York, Sept. 7-14, 3 deaths.
Pennsylvania: Sept. 7-14, Erie, 1 case; Philadelphia, 25 cases, 4 deaths.
Utah: Salt Lake City, Sept. 7-14, 4 cases.
Washington: Tacoma, Sept. 1-8, 1 case.
Wisconsin: Green Bay, Sept. 8-15, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Aug. 24-31, 1 case.
Belgium: Antwerp, Aug. 24-31, 3 cases, 2 deaths.
Colombia: Panama, Sept. 2-9, 12 cases.
France: Paris, Aug. 24-31, 3 deaths.
Great Britain: London, Aug. 24-31, 74 cases, 7 deaths.
India: Bombay, Aug. 13-20, 1 death; Calcutta, Aug. 10-17, 1 death; Madras, Aug. 10-16, 9 deaths.
Italy: Messina, Aug. 24-31, 3 cases.
Mexico: City of Mexico, Aug. 25-Sept. 1, 1 case.
Russia: Moscow, Aug. 17-24, 2 cases, 1 death; Warsaw, Aug. 17-24, 2 deaths.
Uruguay: Montevideo, July 18-25, 10 cases.

YELLOW FEVER.

Cuba: Matanzas, Aug. 25-31, 2 cases.
Haiti: Port ou Prince, Aug. 19-26, 1 case, 1 death.

CHOLERA.

India: Bombay, Aug. 13-20, 11 deaths; Calcutta, Aug. 10-17, 7 deaths; Madras, Aug. 10-16, 76 deaths.
Japan: Yokohama, Aug. 3-17, 3 cases, 1 death.

PLAGUE.

India: Bombay, Aug. 13-20, 201 deaths; Calcutta, Aug. 10-17, 20 deaths.